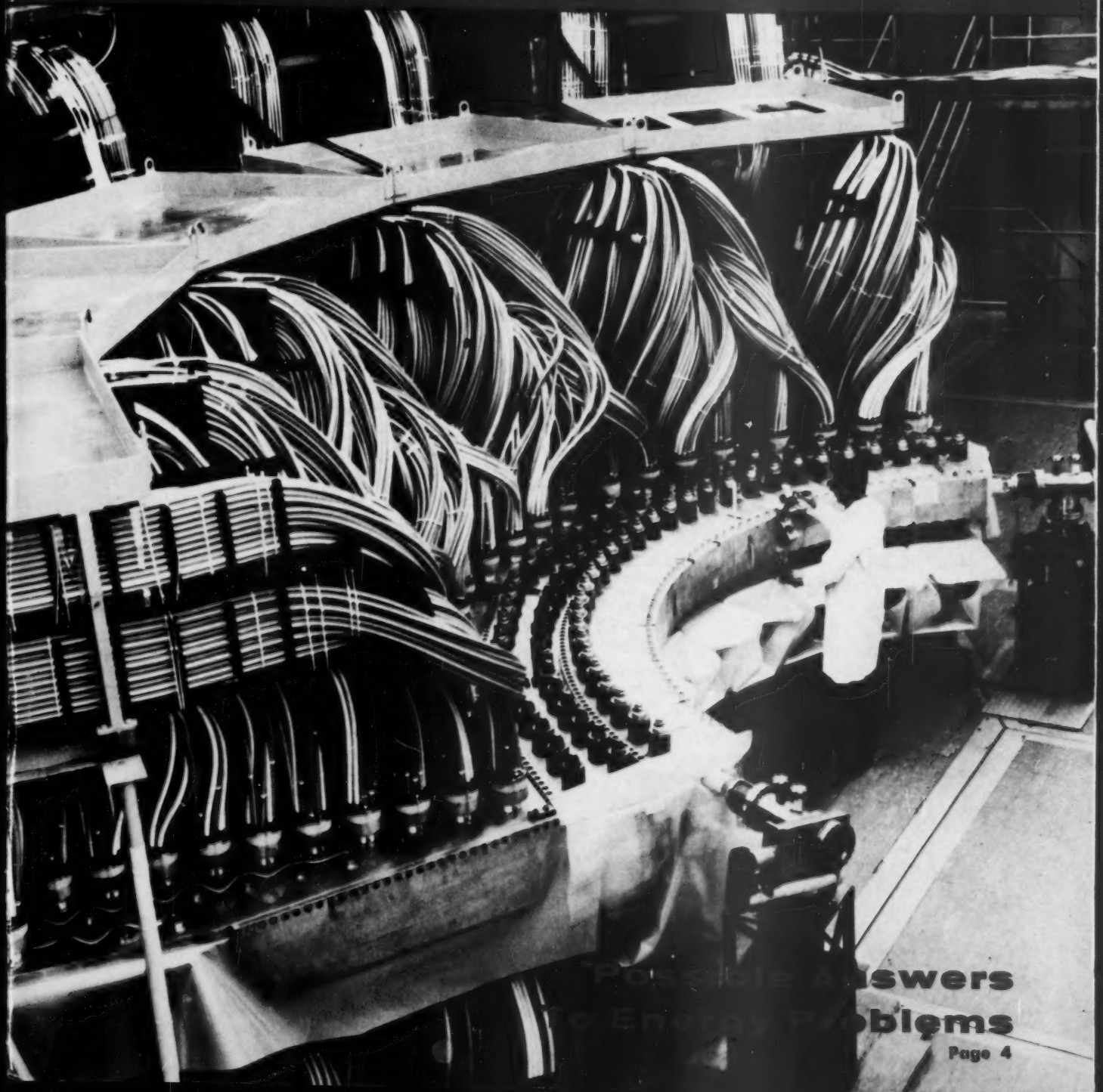
A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

Incorporating *International Commerce*

FEBRUARY 5, 1973

Commerce Today

Coming Developments in Business and Technology



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Page 4

Newsmemo

The Soviets "want to know what is available in the way of new technology." That is why the USSR has made unprecedented ties with a U.S. ad agency, in the view of the Marsteller executives who concluded the agreement (which also includes market research aspects with the U.S.-based Chilton organization). Marsteller thus is planning its ads to be a source of information for interested Soviet experts. The firm will concentrate at first on getting U.S. brand names, trademarks and products established in the USSR, through seminars, exhibitions, and in the widespread Soviet trade press.

We speak your language. That message can help bring more tourist dollars from overseas into the U.S. Offices of the United States Travel Service in seven areas around the world have been publicizing the language resources of more than 200 American hotels and motels which have agreed to provide multi-lingual services to foreign visitors.

Tokyo, Osaka, and now Fukuoka. U.S. Government-conducted facilities to display American products are now spread across Japan. With a display of floor coverings by Congoleum Industries, the American Consulate at Fukuoka has turned over its foyer-waiting room-library area to U.S. firms that want to tap Fukuoka's 14 million-person market. Tokyo has, of course, the permanent U.S. Trade Center. The other exhibition site, the American Merchandise Display Osaka, opened last year.

Meanwhile, U.S. producers are reminded of offers by three blue ribbon Japanese trading units to help them sell in Japan. Mitsubishi, Matsushita Electric Trading, and Toyota Motor Sales all want to distribute a wide range of U.S. goods, as reported in detail in our Oct. 30 and Dec. 11 Worldwide Business Services pages. Recent Japanese import liberalizations, expanding consumer demands, and the continuing effect of the yen-dollar shift are making Japan an ever more attractive market for U.S. goods.

Remember this name: American National Metric Council. It is the nongovernmental body now being set up--and seeking subscription or grant funds from the public--to pull together the great network of activities that will be involved in the U.S. metric changeover when and if it comes. The Council, which has the approval of the American National Standards Institute, will also maintain close liaison with the official National Metric Conversion Board that is to be established under currently proposed metrication legislation.

A giant buoy, bobbing on the Atlantic 125 miles off Norfolk, has been a faithful weather sentinel for the whole U.S. Northeast. It sent data in the past three years that told about more than 50 major ocean-spawned storms. It thus aided more accurate and timely predictions of heavy snowfalls, flooding rains, high winds and seas, and destructive tides and storm surges, with a resultant savings in life and losses in property and transportation. It was the first in an experimental series developed and tested by Commerce's National Oceanic and Atmospheric Administration. Others are now anchored in the Gulf of Mexico and Gulf of Alaska.

Commerce Today

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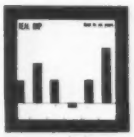
Vol. III, No. 9, February 5, 1973

2 Economic Highlights

The U.S. economy performed better than expected in 1972 as Gross National Product increased by 6 percent and the inflation rate dropped to 3 percent.



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COVER: *A milestone toward eventual demonstration of the scientific feasibility of controlled fusion for generating electricity was passed when an arc segment of this large controlled thermonuclear research device was completed and put into operation at Los Alamos Scientific Laboratory in New Mexico. Fusion is one of the important processes considered for developing energy in this country as the story beginning on Page 4 tells.*

ECONOMIC
HIGHLIGHTS

Growth In Real GNP Exceeds Expectations; Inflation Falls To Lowest Rate In Six Years

Economic Highlights is prepared by Dr. Peter C. Manus, Acting Assistant Secretary for Economic Affairs, and is based on the latest economic indicators (see charts on adjoining page).

The Nation's economy raced along in 1972, doubling its rate of acceleration and at the same time maintaining a tight brake on inflation. This excellent performance surpassed the ambitious targets anounced by the Administration in early 1972: to increase Real Gross National Product 6 percent and to reduce inflation, as measured by the GNP price deflator, to a rate of 3¼ percent.

By comparison, the economic scorecard for the year showed a 6.5 percent increase in Real GNP (total goods and services produced after adjusting for inflation), and a rise in the GNP deflator of only 3 percent. For both indicators, the performance was the best since 1966.

As the second chart indicates, the rate of inflation increased steadily in recent years until it hit a peak of 5.5 percent in 1970; but prices rose at a substantially lower rate in 1971, and then increased by an even smaller amount last year.

Although the business recovery now has been under way for two years, there is little evidence to suggest that the economy is "topping out." On the contrary, fourth quarter results suggest that the economy was building momentum, since Real GNP advanced at an annual rate of 8.5 percent.

The investment sectors registered excellent gains, as shown in the third chart. Expenditures by business for new plant and equipment advanced impressively after remaining virtually level for two years. Although housing did not increase as rapidly as in 1971, the performance was still quite dramatic since this sector already was at boom level.

With the economy creating 2.3 million jobs during the year and rates of pay rising strongly, expenditures by consumers went up $56 billion compared with $48 billion in 1971. The relative increase between the two years is even more pronounced when those figures are adjusted for price changes: almost $30 billion in 1972 compared with only about $18 billion in 1971.

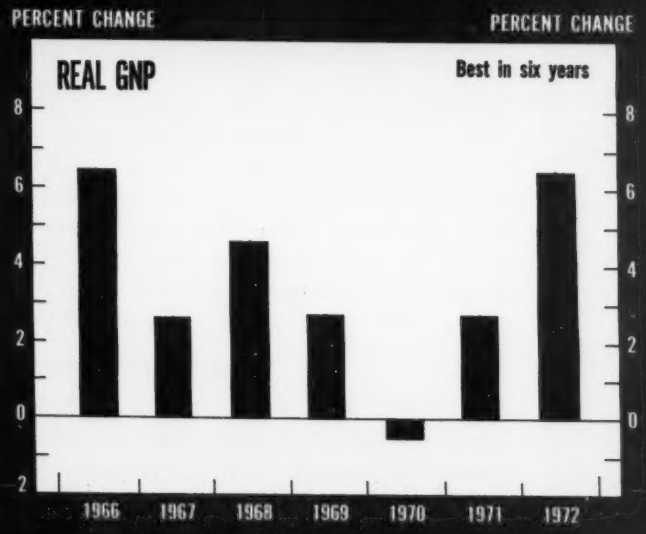
Both Government and private forecasters generally expect another year of strong growth in 1973. Surveys show that businessmen expect an even larger increase in plant and equipment spending than in 1972, housing is likely to continue at a booming rate, and the current momentum, coupled with projected future gains in jobs and incomes, should build more steam under consumer expenditures.

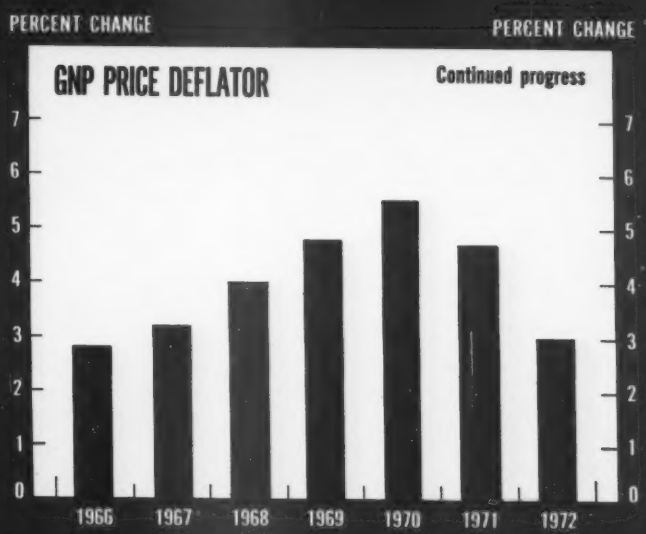
In recent years the economy's potential to produce goods and services has been increasing at slightly more than 4 percent a year. A gain in Real GNP of this magnitude permits an optimum utilization of the factors of production such as men and machines without the strains that generate inflation. In the current situation, however, the economy is operating well below its potential. Thus, GNP can continue expanding at a rapid rate for some time without overheating the economy. But in the future, as GNP approaches capacity, the growth rate will have to decelerate to the long-run rate in order to avoid "bumping against the ceiling of full employment" and generating inflationary pressures.

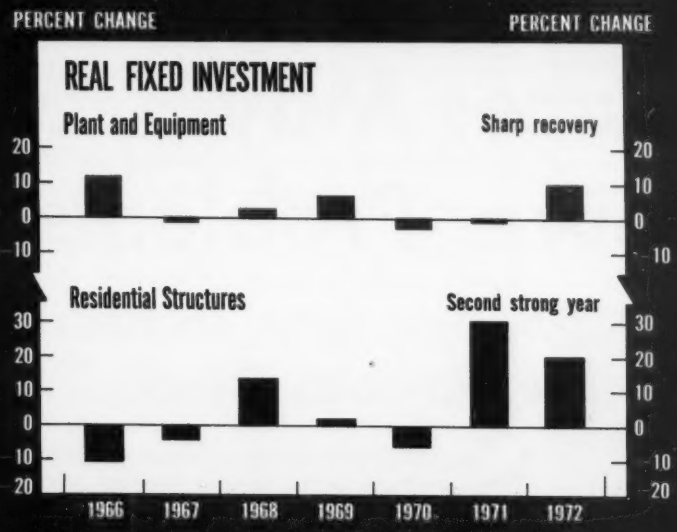
Other economic data

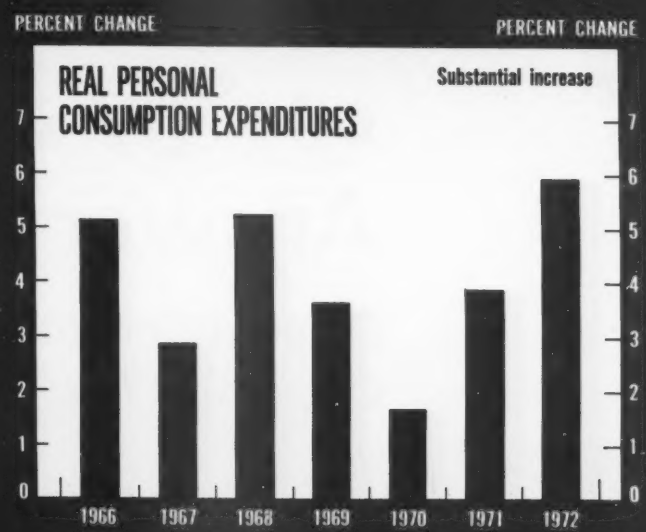
As shown on the bottom two charts, the rate of inflation, as measured by the Consumer Price Index, declined in the fourth quarter of 1972, and industrial production continued its strong uptrend.

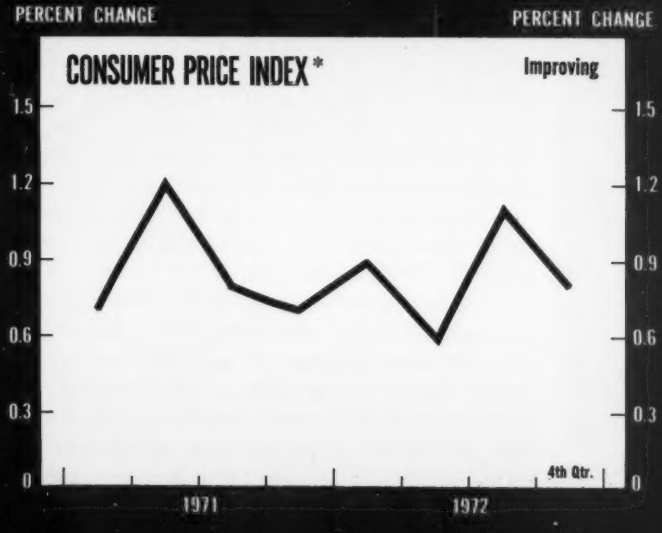
Latest Indicators

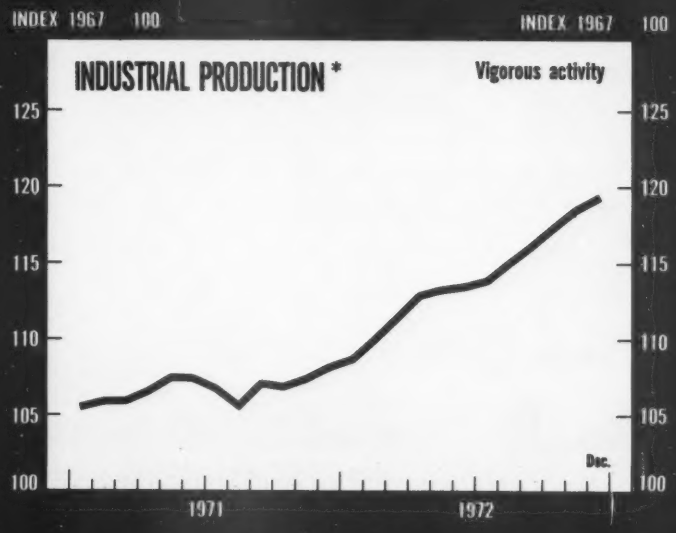










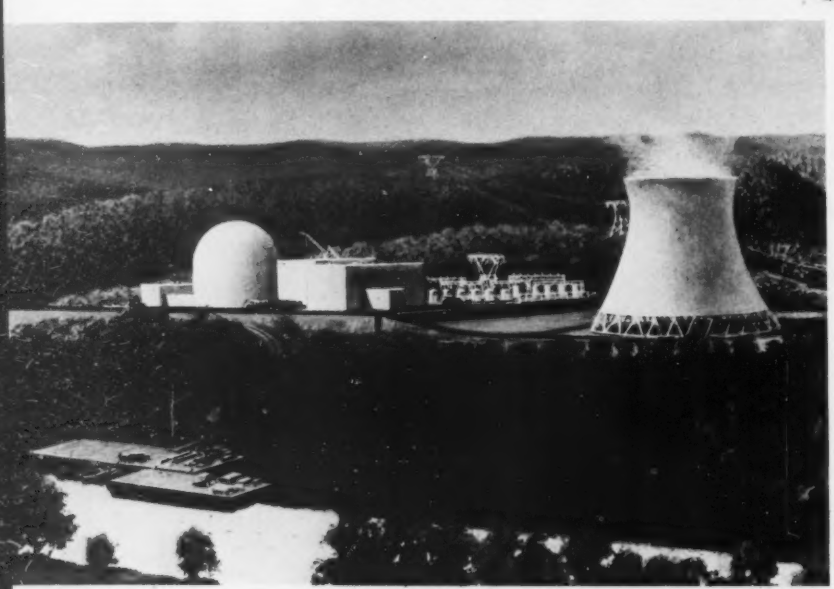


* All data seasonally adjusted

Commerce Today
Vol. III, No. 9
February 5, 1973

Improving Sophisticated Energy Sources May Answer Power Problems

Breeder Reactors, Geothermal, Solar Theories Could End Fuel Shortage, Pollution Threats



ARTIST'S CONCEPT—*This artist's rendering is of one answer to the Nation's growing energy needs—a fast breeder nuclear power plant. The first one will be built near Oak Ridge, Tenn.*

Sophisticated energy sources—such as synthetic fuels, nuclear breeder reactors, fusion, geothermal and solar—may be the answer to this Nation's growing energy needs. At least in the long run.

"Development of more sophisticated energy sources is essential because it can satisfy our long term (fuel supply) needs on a domestic level," says Frederick Lowther, Director of the Office of Energy Programs of the Bureau of Resources and Trade Assistance.

"In actuality, we are running out of developed resources, but not developable resources," Lowther asserts.

Lowther's newly created office serves as a clearinghouse for the Commerce Department's widespread energy activities and programs. The office includes a technically-oriented and data gathering operation—the Energy Resources Division, and the Energy Planning Division which generates new programs, handles public information and performs the clearinghouse functions.

The Nation's real energy supply problem, as Lowther sees it, is one of timing, of national economic policy and of national security.

While domestic reserves of fossil fuels—and potentially new domestic resources—are evidently plentiful, they have not been developed rapidly enough to meet national requirements. Further, even if we begin today to develop these resources, they cannot be developed in sufficient quantities to meet requirements of the next 10 to 15 years.

Massive investment

"If we make a massive capital investment to develop these resources on an accelerated basis, we can probably increase our energy supply significantly in the near term," Lowther says. "The cost required for any major acceleration of development, however, would so distort the pricing of domestic energy and thereby so reduce the demand that, again, our national requirements would not be met."

So the problem really boils down to one of plenty tomorrow, not enough today.

Undoubtedly, the U.S. must turn to the world energy reserves to meet its needs. This poses problems of a drain of dollars to foreign countries and jeopardy to national security. In importing fuel, national security considerations would involve careful efforts to develop as many unrelated sources of supply as possible.

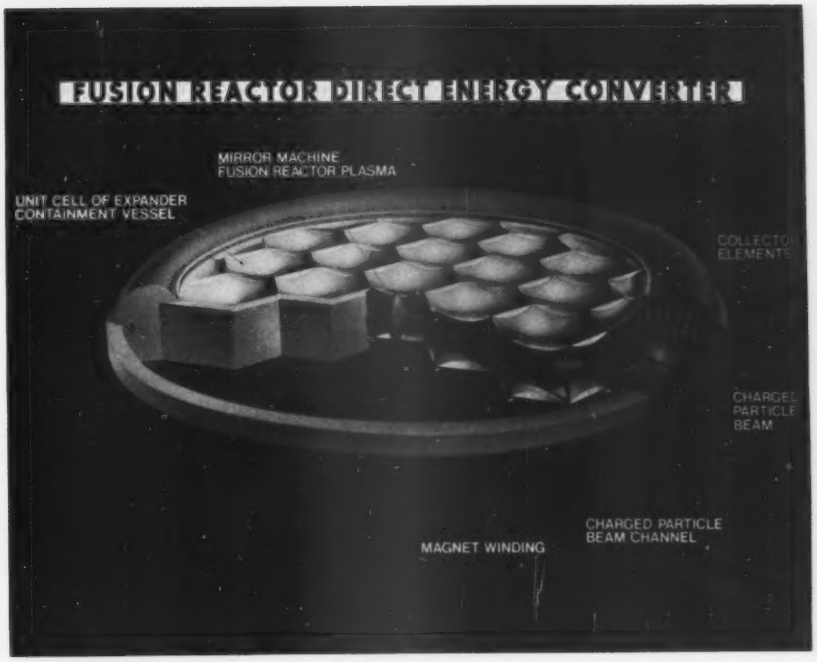
Commerce's interest in energy problems, which will flow through its new Office of Energy Programs, are manifold and include:

► **Balance of payments aspects.** Commerce General Counsel William N. Letson reviewed balance of payments considerations in a recent appearance before the Senate Interior and Insular Affairs Committee.

"Balance of payments considerations call for policy response to maximize United States domestic fuel and energy sources, to minimize forced inefficiencies in domestic energy usages, and to encourage conservation of energy," Letson asserted.

Reliance on substantial foreign (fuel) supplies has "balance of payments implications which relate not only to our world economic position but which inevitably merge into matters of foreign relations."

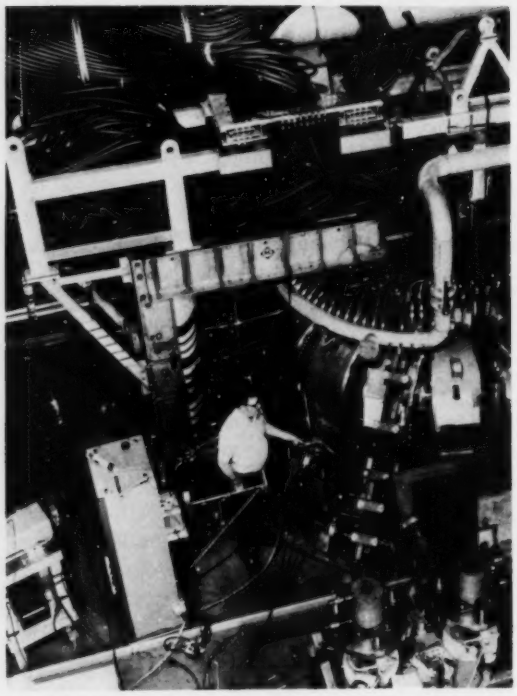
Rough calculations, Letson stated, are that if present policies continue the trade deficit related to U.S. fuel and energy purchases will



DIRECT CONVERSION — *A concept of nuclear fusion plasma confined by a "magnetic mirror" system at center of fusion power. The temperature aproaches a billion degrees, which is adequate for thermonuclear reactions to take place. These reactions release energy which flows out of the central confinement region along well defined paths.*

STORAGE CELLS—*Dr. Eddie C. Gay, staff member at AEC's Argonne National Laboratory, connects a series of Lithium-Sulfur Storage Cells for testing. Cells are placed in a specially designed furnace to preheat the molten electrotyte. The tests are conducted in a sealed enclosure to exclude oxygen which would react with the cell components.*

ASSEMBLING COMPONENTS—*Parts of a Lithium-Sulfur Storage Cell are being assembled, lithium electrode being installed in case. The sulfur electrode (left) is on top of a thin ceramic cloth which separates electrodes. A current connects to sulfur electrode to conduct it through the case when sealed.*



TOKAMAK—*A tokamak device similar to the Soviet TO-3 is in operation at Princeton Plaza Physics Laboratory. The goal of the Atomic Energy Commission controlled thermonuclear research program is the development of a major new source of energy from nuclear fusion to satisfy energy needs.*

rise from approximately $3.7 billion in 1970, to $18 billion to $24 billion in 1980, and $25 billion to $30 billion in 1985. These calculations are based on constant 1970 dollars without monetary inflation and do not take into account U.S. exports of fuels such as coal or enriched uranium.

In worldwide balance of payments terms, the impact of an energy trade deficit of such a substantial magnitude can be lessened by increased exports from the energy deficient nations to the oil producing countries abroad. However, Letson points out, from the U.S. point of view the prospect of exports to the oil producing nations sufficient to offset much of the U.S. payments for fuel is not good.

► **Energy conservation.** The National Bureau of Standards' energy research programs are centered on energy conservation or, "gravitating more and more in that direction," according to Lowther.

One program, for example, is geared toward developing low temperature super-conducting wires which provide a more efficient way to conduct electricity.

Since NBS is deeply involved in energy conservation research "we wouldn't want another unit in the Commerce Department to become heavily committed to an energy conservation program that would impinge on the NBS work," Lowther explains his office's function as a coordinator. "This is an example of where our office could keep units within Commerce from duplicating functions."

► **Maritime.** Because the Nation must import large portions of its fuel supply in the next decade the Maritime Administration has been involved in developing a fleet of ships big enough to transport fuel imports. A large portion of the fleet buildup under the Merchant Marine Act of 1970 has been to transport fuels to the heavily industrialized North Atlantic Coast.

The development of sophisticated energy sources seen as the long-term solution could take the form of massive exploration of synthetic fuels such as coal converted to gas and oil, and fluidized coal combustion. Most important in the process is the sophistication of the technology that would allow the development of such things as solar, geothermal, fossil, fission, fusion and permit them to be environmentally acceptable.

Geothermal involves the use of heat of the earth to convert water to steam to drive a

turbine to generate electricity. Solar energy is capturing the heat of the sun and converting to useable forms of energy.

And, the Atomic Energy Commission plans to break ground in late 1974 for one of the Nation's most ambitous energy solutions—nuclear fast breeder reactor. The first large scale demonstration breeder reactor nuclear electric power plant will be located in the foothills of the Cumberland Mountains near the Atomic Energy Commission installations at Oak Ridge, Tenn.

It will be a part of the Tennessee Valley Authority system and a joint venture of Commonwealth Edison Co. of Chicago, the TVA and the AEC.

Key element

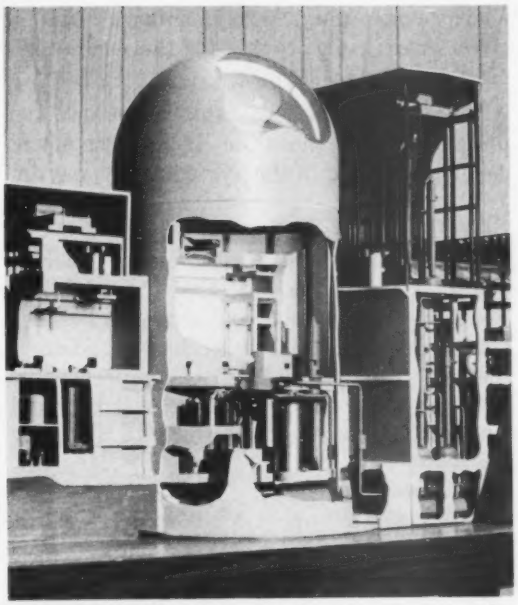
This plant, a key element in the Nation's highest priority energy research and development program, leading to successful demonstration of the liquid metal fast breeder reactor by 1980 as announced by President Nixon in his Clean Energy Message of 1971.

The plant will have a capacity of 350-400 megawatts and is estimated to cost about $700 million.

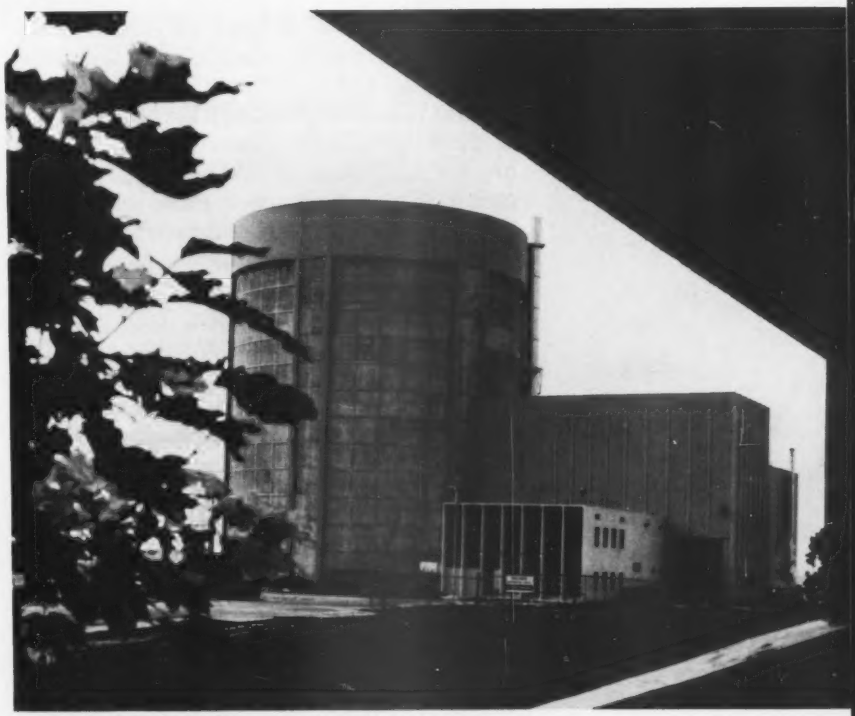
Called a "breeder" because it continuously creates more nuclear fuel than it consumes, the breeder reactor is thought by many to be an environmental as well as energy solution. The fast breeder reactor converts the abundant non-fissionable form of uranium (U-238) to fissionable plutonium (Pu-239). It builds upon the extensive experience in developing present day light water reactors.

Development and subsequent large scale application of the breeder concept is expected to:

- Produce bulk quantities of electric energy at lower cost than by any other means;
- Contribute significantly to reducing atmospheric and thermal pollution by electric generating plants and other energy producing systems;
- Provide a premium market for the large supplies of plutonium which will be generated in the rapidly increasing number of light water reactors;
- Reinforce the massive commitments by U.S. industry in personnel and facilities, and the multi-billion dollar investments already made by the utilities in nuclear power plants;
- Serve to unify and conserve the technical capabilities and financial resources of the



FAST BREEDER—*A model of a fast breeder nuclear power plant of the type to be built jointly by industry and government shows the 300-500 megawatt liquid metal-cooled plant. This will demonstrate the technology of the fast breeder concept to be adopted for commercial operation in the mid-1980s.*



PALISADES POWER — *The Palisades Nuclear Power Station is now producing 610 magawatts of power for its Michigan customers, following the Atomic Energy Commission authorization to increase it operating level to 85 percent of full initial design capacity. Supplied by Combustion Engineering, the 720-mwe pressurized water reactor has been operating at 60 percent of its design rating since March 25, 1972, date of the authorization.*

energy community, both in industry and in government, and provide for their more efficient utilization;

- Maintain U.S. leadership in the safe and peaceful use of the atom, in nuclear power development and in the world energy market.

Program objective

The Liquid Metal Fast Breeder Reactor Program has as its objective the establishment of a safe, reliable and economic breeder reactor system on a broad technical and engineering basis with sufficiently comprehensive industry involvement to assure a strong and competitive industrial capability in the early 1980s.

A comprehensive plan for achieving this objective was prepared in 1968 by AEC and its national laboratories. (This plan is being revised and should be available in early 1973.) The LMFBR program, intensified in the last five years in accordance with this plan, is establishing a sound technology base and has significant momentum in all elements of the program. An important indicator of this momentum is the successful construction and operation of a number of vital LMFBR experimental and test reactors and associated non-nuclear test facilities. The primary locations of these facilities are: the Liquid Metal Engineering Center, Santa Susana, California; the Argonne National Laboratory at Argonne, Illinois, and Idaho Falls, Idaho; and the Hanford Engineering Development Laboratory, Richland, Washington.

A principal element of the U.S. fast breeder program is the commitment to build and operate the Fast Flux Test Facility (FFTF), the largest test reactor facility in the world specifically intended for the purpose of instrumented fuels and materials testing. The FFTF is currently under construction at the Hanford Engineering Development Laboratory and is scheduled for test operations by 1975.

Timely step

The next step toward timely demonstration of commercial breeder capability is to implement promptly and effectively a demonstration plant program to verify individual component and system designs. As noted, a 350-500 electrical megawatt demonstration plant will be constructed and operated by 1980 under a cooperative arrangement of industrial contractors, utilities, and the Government.

Frederick Lowther
Director, Office of
Energy Programs

The Nation's principal electric utilities have strongly endorsed the Administration's selection of the fast breeder reactor as the highest priority nuclear energy development program. This endorsement is evidenced by pledges from more than 100 private and public utility organizations of about $250,000,000 toward the cost of the $700,000,000 demonstration plant.

After demonstration

Following the demonstration program, and as additional technical knowledge and engineering capability accumulate, it will be possible to initiate designs of larger plants in the 800 to 1000 MWe size, the size range of most of the large commercial light water reactor plants now being constructed. During the early to the mid-1980s it is expected that significant commitments will be made for the construction of large commercial size LMFBR plants permitting this concept to be introduced into the power economy in a significant way in the late 1980s, and establishing a viable breeder industry to meet the future long-term energy needs of the nation.

Fusion will use as a fuel the deuterium (isotope of Hydrogen) found in the ocean. Expanded efforts in control nuclear research have brought near the goal of commercial fusion power.

Technology Promotion Policies Of Five Nations Reported In New Study

Each Has Complex Network Of Incentive Plans To Improve Its Capability To Compete Globally

What kind of civilian technology enhancement programs and mechanisms have been initiated by leading industrial nations in recent years? What has been the effect of these programs in promoting the development and application of technology and in increasing the competitiveness of the products of those countries in world markets? How can the U.S. profit from a better knowledge of these programs and mechanisms?

In an effort to find answers to these basic questions, a team of Commerce Department professionals undertook in April 1972 a study to identify the principal technology enhancement programs conducted by a number of advanced nations to improve their own position in the competition for world trade. They chose the five leading trading partners of the U.S. which, like this country, are striving continually to increase their own exports: Japan, the Federal Republic of Germany, France, the United Kingdom, and Canada.

The result of this study is a 328-page report showing that each of these countries is carrying out a complex network of civilian enhancement programs, incentives, and mechanisms, to improve its technology and thus increase the capability of its industries to compete for global business. These efforts, the study found, are intended to stimulate invention and innovation and the development, transfer, and application of new technologies. The means employed, the inquiry disclosed, include subsidies, tax and other incentives, government procurement, joint ventures, research and development investment in designated industrial sectors, and low and no-interest loans.

Richard O. Simpson, Acting Assistant Secretary of Commerce for Science and Technology, explained that the study was undertaken in the hope of learning from the experience of the five countries.

"The study makes no recommendations for U.S. policy or programs," he added, "but provides a factual basis on which the Execu-

tive Branch and the Congress might draw."

No attempt was made in the study to evaluate the effectiveness of the technology enhancement techniques of the different countries, particularly as they apply to U.S. conditions, or to compare the programs of one country with another. The purpose was simply the accumulation of basic information.

Simpson said that factors which induced the Commerce Department to make the study included the declining U.S. balance of trade, which in 1972 turned into a deficit for the first time since 1893; increasing imports of high technology products; barriers to the commercialization of technology; and the observation that certain foreign countries sponsored technology enhancement programs which helped to increase the competitiveness of their products.

Basic conclusions of the study team are:

- The effectiveness of technology enhancement programs appears to be greater in those countries in which national science and technology policy and goals are well defined, particularly as they affect designated industries.
- Effective management of such programs seems to require the establishment of a science and technology agency for planning and coordinating at the highest level of government.
- Open channels of communication and mutual trust between government agencies and the private sector are essential.
- Modernization of equipment and facilities and increased industrial productivity are accelerated and integrated into continuous industrial technological renovation through various technology enhancement mechanisms and incentives.
- Most of the countries give special attention to specific incentives to stimulate research and development in small and medium-sized firms.
- A high level of funding for a specific technology enhancement program does not necessarily insure success. Fear of government interference and excessive "red tape" were often cited by the private sector as their reasons for not participating in these programs.

The report points out that in all of the five countries the planning and coordinating function for the science and technology programs was performed by an agency at the cabinet or ministerial level.

All five countries, the report says, have established a special agency to deal specifically with the stimulation of invention and innovation and the commercialization of research findings that are in the public interest and appear to have a good industrial potential.

"The agencies," the report adds, "evaluate research findings primarily of government research laboratories and institutes . . .

"All five agencies underwrite part or the full cost of developing a new technology or product and require repayment of their investment plus the payment of royalties only in the event the venture is successful."

The report was prepared in the Office of the Assistant Secretary of Commerce for Science and Technology under the direction of John A. Birch, Adviser for International Activities. Dr. George C. Nichols, Senior Economist of the National Bureau of Standards, was responsible for organizing and conducting the study and for preparing the report.

Dr. George C. Nichols
Senior Economist, National Bureau of Standards

Specific information in the report on the technology enhancement programs of the five countries includes the following:

Japan: "After World War II, the rebuilding and restructuring of Japanese industry, the establishment of new technology-intensive industries, and the raising of the country's technological base to a more advanced

level were accomplished substantially through the importation, modification, and assimilation of foreign technology, although heavy government subsidies and the dedicated determination of the Japanese people were equally important factors.

"The Japanese government has established a complicated system of interlocking agencies, advisory councils, quasi-public corporations, industrial research and development laboratories, and mandates, and has participated in the launching of a large number of technology enhancement programs. Every ministry in Japan to some degree promotes science and technology."

The report explains that at least two

John A. Birch
Adviser for International Activities, Office of Assistant Secretary for Science and Technology

Japanese government agencies have as their primary charter the promotion of science and technology, the Science and Technology Agency and the Ministry of International Trade and Industry through its Agency of Industrial Science and Technology.

"MITI's policy," the report says, "has been to balance the 'need' of technology imports against protection of the domestic industry from unrestrained competition, thereby insuring industry's steady growth and, insofar as possible, retaining control in Japanese hands.

"Although government guidance and direction of the economy has been unmistakable and pervasive, government-private sector relationship has been highly cooperative.

"The government has a paternalistic attitude toward the private sector, and undertakes programs only after reaching a 'consensus' with the other side. This often requires extended time in consultations during which differences are slowly ironed out and a mutually agreeable course of action is charted."

Federal Republic of Germany: "At the close of World War II, before full powers of self-government were returned to the FRG (Federal Republic of Germany), the individual states began to revive the scientific establishments within their territories as had existed before the war.

"Universities and their research centers were rebuilt and pre-war research institutions were reestablished. Industrial firms began to regenerate. The scientific base, traditionally a major factor in the economy and the lives of the people, began to expand. Financial problems soon faced the States, and they banded together to assist each other in the operation of their scientific organizations.

"Soon after the Federal government was formed, the States were in need of further assistance. Agreements were reached whereby major research institutions were equally supported by Federal and state funds."

The report tells of the initiation by the Federal government of the First Nuclear Energy Program in support of the "big science," an extensive operation related to modern technology; the complex interaction between representatives of Federal and state governments, the academic community and the private sector in determining plans, policies, and priorities; the formation of coordinating bodies to unify goals and minimize duplication of effort; and the establishment of science policy by the the Federal government based on information from the various sources.

"Within the emphasized program areas," the report explains, "projects are initiated either by government or by industry. Selected projects receive support, usually in the form of grants, from public funds. Industrial initiative is maintained by requiring industry to provide a portion of the funding, usually one-half. The technology which results from the supported projects is owned by the performing firm.

"However, government reserves the right to make the results, including protected rights, available to other industrial firms. The government is not in the licensing business, however, and negotiations for the use of protected rights are made directly between firms . . ."

France: "High technology industries, such as electronics, chemicals, and measurement instruments, are still being given priority within a framework of promoting industry in general, but government emphasis on selected industries is being somewhat reduced in favor of more broadly applicable research and development . . .

"Among the industries which receive the highest priority and greatest levels of funding are those concerned with atomic energy, space, oceanography, telecommunications, and the government research laboratories. The DGRST (General Delegation for Scientific and Technical Research) is the principal agency which dispenses government contracts for industry research and incentives for development.

"Government-private sector relationship and interaction are influenced by the fact that a significant portion of the business enterprises is owned by the government, either wholly or in part, and that 10 percent of all industrial output in France is produced by government-owned companies. Some of these enterprises are nationalized. Overall, about 30 percent of French investment is government-funded.

The report, entitled "Technology Enhancement Programs in Five Foreign Countries" (COM-72-11412), is available for $9 from the Commerce Department's National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151.

United Kingdom: The report points out that, since the Conservative Party returned to power in 1970, the Ministry of Technology has been dismantled and the Department of Trade and Industry has been formed.

"Since then," the report adds, "two policy trends have become evident: the decentralization of government support for R & D, with control reverting to 'mission' agencies, and a change from an 'activist' role, with government seeking to lead, control, and stimulate R & D in industry, to a 'hands-off' attitude."

Recalling that the quasi-governmental Industrial Reorganization Corporation (IRC), which had been one of the primary means for government direction of industry, was abolished in May 1971 the report says:

"Other programs have been instituted to promote and sustain faster economic growth, to secure the expansion and modernization of industry, to alleviate problems of regional imbalance, and to assist industry to meet the challenge of the European Economic Community. These programs are designed to perform many of the same objectives as the IRC without direct intervention by the government, hence there appears to be some softening of the 'hands-off' policy."

Discussing the various programs in effect in the United Kingdom to improve science and technology, and to aid selected industries, the report says:

"There are trends evident whereby many older programs which provided investment grants on capital expenditures for machinery, plant, computers, and prototype development, are being replaced by programs of tax allowances."

Canada: "Interaction with the private sector is affected primarily through the government technology enhancement programs and by the fact that the government owns some business enterprises, either wholly or partially, as well as maintains a capital equity interest in joint ventures with industry.

"However, government policies and programs relating to industry are, in fact, sometimes formulated with little industry participation. Industry's reluctance to cooperate may be at least primarily responsible for this, stemming from its fear of government control and intervention. Both government and industry officials admit to the need for improved communication between the two sectors."

Regarding the activity of the U.S. in the technology enhancement field, the report says:

"The United States is perhaps the only advanced nation in the free world which has not undertaken national programs to stimulate technology development in the civilian sector. It has, of course, provided considerable financial support of basic research, and has spent enormous amounts of money on R & D contracts to industry in connection with the country's defense and space exploration programs."

—Office of the Assistant Secretary, Science & Technology

Free Trade Zones Abroad Can Aid U.S. Exporters As Competition Mounts

Customs-Privileged Areas All Around World Offer Advantages In Reaching Local Markets

Free trade zones, free ports and similar customs-privileged facilities in foreign countries afford important advantages to United States exporters, in an increasingly competitive era.

They provide exporters a base at the doorstep of their foreign customers from which export goods may be processed, sold, distributed and serviced. Export firms using free trade zones abroad often find many advantages, including tax relief or exemption, inexpensive land and plant or warehouse facilities, access to raw materials in neighboring countries which may be imported free of duty for use in production for re-export, and nearby markets for finished goods. Efficient use of free trade zones can bring about savings for the United States exporter, especially in transportation costs.

To acquaint exporters and potential exporters with free trade zones and other customs-privileged facilities located near their overseas markets, the Department of Commerce prepared a publication entitled

ENTRANCE BY LAND—*Trucks and other vehicles use this gate to the Barranquilla, Colombia, Free Trade Zone. Most of the goods leaving the zone move into Colombia.*

IN PANAMA—*At the crossroads of the Western Hemisphere, these piers serve the Colon, Panama, Free Zone.*

"Free Trade Zones and Related Facilities Abroad." This booklet discussed the development of free trade zones outside the United States, the economic factors influencing their use, and current trends in their operation and management. It further provided detailed descriptions of the zones operating at that time.

Since the July 1970 appearance of the booklet the establishment of new free trade zones has actively continued. A substantial number of new zones are in various stages of planning or development by governments and private organizations throughout the world. These planned zones reflect the same world-wide geographical distribution and emphasis on export processing facilities that were shown in the 1970 booklet.

Four new zones

According to the best information available, four of the zones, La Romana, Masan, Lappeenranta, and Mauritius, have become operational since publication of "Free Trade Zones and Related Facilities Abroad." Basic data on each of these zones follows. In their variety of detail they illustrate how free trade zones can serve the U.S. trader. (The Department of Commerce has endeavored to verify the accuracy of this information but cannot assume responsibility for possible errors or omissions.)

Industrial Free Zone, La Romana, Dominican Republic: The city of La Romana situated on the southern coast of the Dominican Republic, has a population of about 37,000, with its own airport and port facilities. The Romana Free Zone was established in 1969 by a 30-year contract between the Dominican Government and Gulf & Western American Corp. empowering the latter to manage and operate the Romana Free Zone. Operadora Zona Franca, a subsidiary of Gulf & Western, operates and administers the zone.

Firms located in the La Romana Zone can import free of duty and excise taxes, from all sources, the great majority of materials that may be necessary for the installation of their facilities and the production of goods. Companies chartered outside the Dominican Republic receive complete exemption on all taxes, including corporate, profit, dividend, production or sales, patent and municipal.

Customs service is available at the zone. Material consigned to the zone is inspected at the plant, meaning that a shipment arriving in another port of entry in the Dominican Republic may go in bond to the zone without being opened for inspection until it reaches its destination.

All goods and products exported or reshipped to foreign countries are free of duties or excise taxes. Goods shipped into the Dominican Republic, which are not manufactured elsewhere in the country, receive special customs treatment, paying only 90 percent of the normal duty.

Paved asphalt roads connect La Romana with the principal cities of the island. The port, located a short distance from the zone, has a 700-foot wharf capable of serving ships of up to 15,000 tons deadweight and a draft of about 32 feet. The airport has a 6000-foot asphalt paved runway permitting piston-engine commercial aircraft and small jets to land and takeoff with ease. Customs and immigration clearance for incoming and outgoing international flights is available, as well as refueling services.

Additional information may be obtained from La Romana Industrial Free Zone, P.O. Box 135, La Romana, Dominican Republic.

Free Export Zone, Masan, Korea: The city of Masan, located on the southern coast of Korea 45 miles east of Pusan, has a population of about 225,000.

The Masan Free Export Zone was estab-

lished in January 1970 by the Korean Government. Masan is essentially a limited free trade zone in that free trade zone privileges (i.e., duty free raw material and equipment imports) are limited to industrial concerns and associated service enterprises which produce, process or assemble goods solely for the export market. The zone's purpose is to attract new investment by highly technical and labor-intensive export industries. It is not intended to facilitate the importation of goods into the domestic Korean market or to be used for the warehousing of goods intended for third-country markets.

Enterprises eligible to operate within the zone are those engaged in the production, processing or assembly of goods for export. They must be either wholly foreign-owned enterprises or joint ventures between foreign and Korean investors in which foreign equity interest represents over 50 percent of paid-up capital. Occupants of the zone must have definite prospects for export, a high ratio of foreign exchange earnings, advanced manufacturing techniques and labor-intensive production. Related service operations such as warehousing, banking, transportation, stevedoring and packing are provided in support of production activities in the zone. Occupants of the zone may either purchase or lease land from the administering authority.

Businessmen will find detailed, useful information on free trade zones around the world in two U.S. Department of Commerce publications. One, which relates to such zones in the U.S. only, is the "Annual Report of the Foreign-Trade Zones Board of the United States." The 33rd Annual Report is currently available. The other, mentioned in the accompanying article that deals with zones in foreign countries only, is "Free Trade Zones and Related Facilities Abroad." Both may be obtained from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. Price of the former is 35 cents; the latter, $1.25.

Foreign firms operating in the zone will be exempted in full from the payment of income, corporation, property, and property acquisition taxes, as well as taxes imposed on dividends or surplus funds accruing from the principal owned by foreign investors, for five years from the start of business operations. A 50 percent reduction of such taxes will also be granted for the following three years. Income and corporation taxes on profits from exports will, in general, be reduced by 50 percent after completion of the tax-free periods. In addition, business and commodity taxes will not be imposed on the export activities of occupant-enterprises nor will customs duties be imposed on raw materials and equipment required for export production. Foreigners will also be exempt from the payment of personal income taxes.

PUBLIC WAREHOUSING — *An important free trade zone feature is warehouse service. At the Colon, Panama, zone this includes handling, repacking, repackaging and shipping by the zone's own workers and equipment.*

The port of Masan is capable of handling vessels up to 20,000 tons at two berths, and domestic airline service connects Masan with the international airport at Pusan.

Additional information may be obtained from the Office of the Masan Free Export Zone Administration, Room 803, Ssangyong Building, 24, 2-ka, Chu-dong, Chung-ku, Seoul, Korea.

Free Trade Zone, Lappeenranta, Finland: Lappeenrannan Vapaavarasto Oy, a private company owned by the city of Lappeenranta, opened Finland's fourth free trade zone in November 1971. Lappeenranta is located in eastern Finland near the border with the Soviet Union. While it is perhaps not as conveniently located as Finland's other free

EAST OF AFRICA—*Port Louis harbor, on Mauritius, is on the Indian Ocean trade routes. Mauritius has joined the list of areas offering free trade zones.*

trade zones at Helsinki, Turku and Hanko for use by United States exporters to that country, it may well be of assistance to firms interested in trade with the Soviet Union.

This new free trade zone covers an area of approximately 17 acres with cold storage facilities of 8,000 square meters. It is served by a rail line which is the same gauge as that in the Soviet Union.

Foreign goods may be brought into the Lappeenranta Free Trade Zone without customs clearance and can there be repacked, divided, assorted, blended, mixed and otherwise handled as if they were outside the customs area of Finland. Industrial activities, however, may not be carried on in the free trade zone without special permission from the government. Goods that are brought from outside Finland directly to the free trade zone must be cleared through customs only when taken from this area for sale in Finland. The importer is not obliged to have goods cleared when they cross the Finnish border into the country in direct transit to the free trade zone.

Additional information may be obtained from the Managing Director, Lappeenrannan Vapaavarasto Oy, Valtakatu 37 B, 53100 Lappeenranta 10 Finland.

Export Processing Zone, Mauritius: Mauritius, an island of 720 square miles in the southwest Indian Ocean is about 500 miles east of Madagascar and 1,250 miles off the African coast. The island has a population of over 800,000 of which about 140,000 live in Port Louis, the capital and largest city.

The government of Mauritius is establishing a number of export processing zones throughout the country. The first export processing zone has been opened in the large industrial estate of Plaine Lauzun at Port Louis. Additional export processing zones are being developed at La Cure and Les Salines near Port Louis, at Curepipe in the Central Plateau, at Beau Bassin, and near Plaisance Airport.

The exporter located in an export processing zone can import capital goods, raw materials, components and semi-finished goods free of import duty and excise taxes except for petroleum products, alcohol and tobacco. Firms in the zones also receive a corporate income tax holiday for a minimum of ten years and exemption from the payment of certain harbor fees.

The island has a good road system, about 80 percent of which is paved. Port Louis can accommodate vessels with a draft of up to 29 feet. An international airport is located at Plaisance in the eastern part of the island.

Additional information may be obtained from the Secretary for Industrial Development, Ministry of Commerce and Industry, 4th Floor, Anglo-Mauritius House, Port Louis, Mauritius.

Other new zones

According to the most recent information available to the Department of Commerce, a number of free trade zones or similar customs-privileged facilities have been authorized within the past two years but are understood not to be fully operational as yet.

In Malaysia an industrial estate of 220 acres adjacent to the airport at Bayan Lapas on Penang Island has been set aside as a free trade zone. Development has begun on the 175-acre Mariveles Foreign Trade Zone being established at Mariveles, Bataan, in the Philippines. Work is under way on the Industrial Park free zone located near the airport at Port-au-Prince, Haiti.

Also, Business Company SRL, a Paraguayan firm, is the sole concessionaire for a 25-acre free zone that Paraguay is establishing at Puerto Presidente Stroessner on the Parana River. Colombia is in the process of establishing two additional free trade zones, one at the Pacific coast port of Buenaventura and the other inland at Palmaseca International Airport near Cali. Syria plans to establish four free zones, at Aleppo, Damascus, Latakia and Tartous.

—Bureau of International Commerce

DOMESTIC BUSINESS REPORT

- **Prosperity seen for paper and board industry**
- **Texas Indians turn heritage into profits**
- **Sea communications due for upgrading**
- **Inland waterways increasing load**
- **Navajos are most numerous tribe**

Sea Communications Due For Upgrading

Improving communications for this Nation's Merchant Marine of tomorrow is a Maritime Administration priority item that has two new turns:

Awarding of a contract for an automatic calling system for ocean-going vessels.

Announcement by a Maritime Administration official that the agency will shortly request proposals for a detailed study of inland waterways communications needs and alternative systems to satisfy them.

The $247,000 contract for the development of a maritime digital calling system has been awarded to GTE Sylvania of Mountain View, Calif., Robert J. Blackwell, Assistant Secretary of Commerce for Maritime Affairs, announced.

The proposed system would be able to operate over all present maritime communications channels and on future satellite systems. Each unit responds automatically to individual, group and all-ships calls, eliminating today's average six-hour delay, which results mainly from the fact that shipboard radio operators are on duty for only eight hours daily.

Several units will be installed at coastal stations and aboard government and commercial ships for test use prior to full-scale implementation, Blackwell said. This trial period is scheduled to begin in May.

If this program proves successful, the U.S. will advocate its worldwide adoption at the 1974 International Maritime Administrative Radio Conference, sponsored by the United Nations' International Telecommunication Union.

The ITU authorized in 1967 a system which meets present calling requirements. But the number of call signs used and the length of messages sent are limited under this system.

With the proopsed system to be developed by GTE Sylvania, however, any call sign can be used and

Robert J. Blackwell
Assistant Secretary of Commerce
for Maritime Affairs

messages of any length can be transmitted. The equipment switches on a bell or light alarm to announce pertinent messages, freeing radio operators to pursue other duties, such as maintenance of equipment.

On the domestic shipping study, Howard F. Casey, Deputy Assistant Secretary of Commerce for Maritime Affairs, said a six-month study should result in a communications system that can be readily constructed and used—one tailored to the specific needs of inland waterways operators.

Improving communications is a matter of some urgency to towboat operators who need timely data on barge movements. Moreover, the towboats need advance information on river conditions, lock availability and logistical support arrangements fo refficient ouerations.

The study, the cost of which would be shared by industry and government, would define and quantify the inland waterway communications requirements to a greater extent than is now known. It would examine alternative system concepts that could improve radio communication services and analyze them for cost effectiveness.

Further, potential regulatory problems would be identified and a recommended system proposed.

—Maritime Administration

Ombudsman For Business

Businessmen who need assistance in their dealings with the Federal Government have a central office in Washington, D.C., to write or call for information, suggestions, or even for registering complaints — the Commerce Department Ombudsman for Business.

All inquiries should be addressed to the Ombudsman, Thomas E. Drumm, Jr., Special Assistant to the Secretary, U.S. Department of Commerce, Washington, D.C. 20230, or call 202-967-3178.

Continuing Prosperity Seen For Paper and Board Industry

"The expansive economy envisioned for 1973 should be reflected in record production, sales and earnings for the paper and board industry," a new Commerce Department report states.

Rising five percent over the record figure estimated for 1972, industry shipments are projected to reach $10.9 billion in the coming year with part of the increase attributable to a higher priced product mix.

These projections are made by Donald W. Butts, industry specialist for the Bureau of Competitive Assessment and Business Policy, in a quarterly report on the **Pulp, Paper and Board** industry.

"Supported by a growing domestic market and endowed with ample supplies of raw materials, the paper and board industry should share in meeting the projected increases in world paper and board demands," the report concludes. "By 1980, the value of paper and board shipments are expected to reach $15.5 billion, representing a 5.1 percent annual growth rate."

Surpassing the exceptional performance of 1972, production is expected to climb 4 percent to 60.5 million tons in 1973, Butts wrote in the report. Because of the high output-to-capacity ratio achieved in 1972, and because only moderate increases in capacity are foreseen for 1973, the anticipated expansion in demand is expected to force the production ceiling limits, in sharp contrast to the normal state of underutilization.

In fact, the report explains, limitations in overall production capabilities may restrict the industry's ability to share fully in the growth in general economic activities anticipated in 1973.

Following its normal pattern, apparent consumption of paper and board rose with the upturn in general economic activity in 1972. Estimated at 62.9 million tons or 600 pounds per capita in 1972, apparent consumption should rise 4 percent to 65.3 million tons in 1973, maintaining the U.S. position as the world's foremost consumer of paper and board.

Over 20 papermills throughout the Eastern region reported difficulties and shutdowns from the effect of Hurricane Agnes with heavy costs arising from repairs, clean-ups and loss of business.

Further, the report noted that although demand for most grades of printing and writing papers was disappointingly slow in returning in the early part of 1972, improved markets in other segments served to more than offset the shortcomings and effected a reversal of the sluggish profit trends endured through 1970 and 1971.

Strong requirements

"Strong requirements for paper and board in packaging and construction industries evidenced in 1972 is expected to be sustained throughout 1973," the report projected further, "and demand for printing and writing papers, accelerating through the last half of 1972, will also continue strong.

As the third largest water consumer among manufacturing industries, water quality improvement programs concern pulp and paper manufacturers, the report notes.

Additional capital investment required for compliance with new and stricter antipollution regulations has drained capital, adversely affected profitability and, in some instances, caused the permanent closing of pulp and paper establishments.

An estimated $234 million, or 19 percent of the industry's total capital expenditures in 1971, was spent on pollution abatement facilities. Future spending for these purposes

is expected to continue at about the same ratio.

Continued industry research is underway to develop technologies for removing color and turbidity from effluent water and for further abatement of odor and sulfur in boiler stack emissions.

In past years, waste paper has supplied about 20 percent of the industry's fiber needs. However, in recognition of the need to conserve fiber and alleviate the pressing solid waste disposal problems, interest has been focused on new ways to increase the waste fiber content of the industry's products.

A recycling target of 35 percent by 1985 has been projected by the National Academy of Sciences. If domestic paper consumption grows as predicted, the 35 percent recovery rate would represent a 300 percent increase in volume of recycled paper by the mid-1980s.

To increase use of waste paper, sufficient quantities of acceptable quality must be available at prices competitive with virgin wood pulp. Expanded markets are needed for products presently utilizing waste paper. —*Bureau of Competitive Assessment and Business Policy*

Pollution Drive Cleans Georgia River, Keeps Dismal Swamp Dismal

From the Savannah River to the heart of the Great Dismal Swamp —Union Camp Corp. of Wayne, N.J., is engaged in a multi-million dollar environmental campaign that environmentalists might envy and other industries might pattern.

At its Savannah, Ga., papermill, Union Camp has completed a new $17 million aeration lagoon. The treatment facility is helping to cut the wasteload in effluent sent into the Savannah River by 85 percent, the amount required by the federal government.

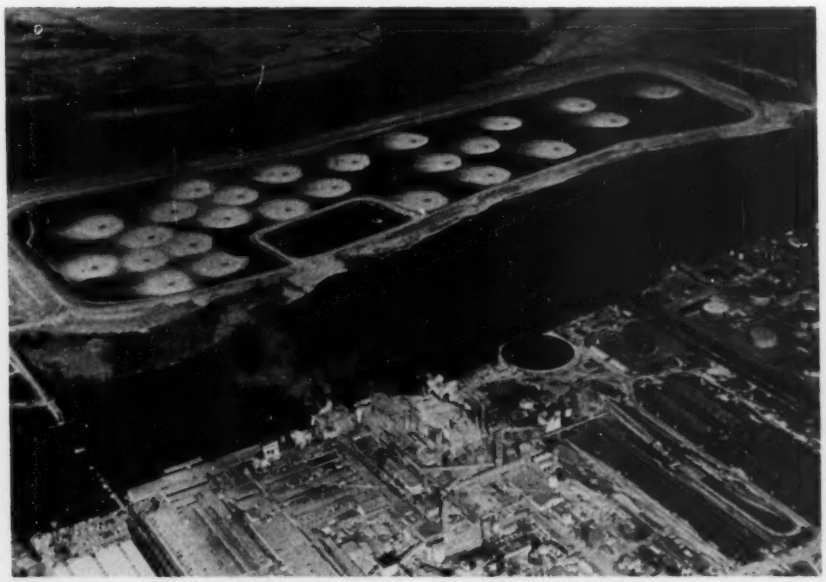
And, Union Camp land on the Virginia-North Carolina border—appraised at $12.6 million—is being saved for a national wildlife conservatory. Seventy-seven square miles of Union Camp property will be deeded over to the Nature Conservancy.

The land, located in Virginia, is the last great Eastern wilderness and includes all of Lake Drummond, which is considered the key to survival of the swamp. The first of three parcels of the 49,000-acre gift will be transferred this month — probably on George Washington's Birthday.

(Union Camp is one of 63 active member companies on the National Industrial Pollution Control Council. The Council, which has 225 additional member companies on the more than 30 sub-councils that represent the various industry categories, provides the Administration with information concerning industry's efforts in correcting its pollution problems.)

The secondary treatment facility at the Savannah plant is one of nearly 30 environmental commitments Union Camp made in a letter to the NIPCC executive director. In addition to pulp and paper mill, the 2,800-ton-per-day industrial complex includes a bag factory, box factory and chemical plant.

It is small wonder that the 36-year-old plant once symbolized the struggle between environmentalists and industry. But Union Camp attacked its environmental problems in a kingsize way. Its 100-acre



LAGOON IN OPERATION—*An air shot shows the Union Camp lagoon in operation. The rectangular section on the near side of the lagoon is an emergency settling pond. This is provided in case it is necessary because of mechanical difficulties to bypass the primary treatment clarifier and shift to the emergency system.*

FIBERGLASS PIPE — *Assembled pipe for Union Camp's secondary wastewater treatment lagoon is shown on Hutchinson Island prior to pulling into the river.*

aeration lagoon treats 33 million gallons of wastewater a day. The firm's air and water programs at this plant alone will, when completed, have cost more than $56 million.

The secondary treatment facility includes three steps to reduce the amount of contaminants in wastewater flowing into the wastewater treatment system. These are:

A large new evaporator to provide full capacity for concentrating black liquor prior to burning; segregation of evaporator condensates for reuse as process water; and, addition of a large new cooling tower.

A collection system for all plant sanitary waste is installed so that it can be discharged into a municipal sewage treatment plant.

The aerated lagoon on an island in the Savannah River across from the plant, has some 30 mechanical aerators and the wastewater is transported under the river in 3.5 inch diameter fiberglass pipe. In addition, an elaborate plant-wide collection system will bring process wastes from the bag factory, container plant, chemical plant and woodyard flumes into the main treatment system.

Commitments in air pollution control for the Savannah plant are:

- All three lime kilns have been equipped with modern Venturi scruppers, operating at 99.6 percent collection efficiency and costing $750,000.
- A complete black liquor oxidation system will be installed this year at a cost of almost $2 million. It is designed to remove more than 90 percent of the reduced sulfur compounds emitted from the recovery furnace systems.
- A giant new recovery boiler system capable of burning 4,000,000 pounds per day of black liquor solids will be added to replace four old boilers. The new boiler with associated equipment will cost $21 million. A new high efficiency precipitator will be included.
- The two remaining recovery boilers will be completely rebuilt with modern instrumentation and new high efficiency precipitators.

This work will cost $11 million and should be completed in late 1973. Operation of these renovated boilers along with the large new boiler will bring about a dramatic improvement in particulate emissions from the recovery area of the mill and generally assist in lowering the mill's odorous discharges.

Union Camp, a forest product oriented company, operates four paper mills, four lumber mills, a plywood plant, a flakeboard plant and six chemical by-products plants. Paper and paperboard are converted at 33 other Union Camp plants into bags, boxes, school supplies and printed specialties.

The firm's other environmental commitments, listed in the letter to NIPCC, involve improvements at Franklin, Va., Montgomery, Ala., Monroe, Mich., Jacksonville, Fla., Chapman, Ala., Valdosta, Ga., New Hope, Pa., and Glens Falls, N.Y.

"We feel our action and plans provide ample evidence of our positive dedication to a better environment," asserts Alexander Calder, Jr., chairman and president of Union Camp.

Expressing concern about constantly changing standards and legislation, Calder concludes that "a practical approach to pollution control is necessary if America is to achieve its general social goals and avoid serious economic distress." *—NIPCC*

LAGOON SURFACE—*This close-up of Union Camp's lagoon surface shows aerators operating. Wastewater contains dissolved organic solids, mostly wood sugars, which react much like soapy water when aerator blades churn it. This explains the foam which is not released with the treated effluent, but instead is eventually dissipated by rain.*

DREDGE PIPELINE—*The end of the dredge pipeline is shown discharging fill during the dike construction. The bulldozer in the background is assisting in the dike formation. Total cost of the Union Camp project was $17 million.*

Beer Firm's Can-Buying Program Shows Recycling Coming Into Own

"Public response to the recycling of containers continues to be overwhelming," asserts W. K. Coors, president of Adolph Coors Co. of Golden, Colo.

While other industries fight air and water pollution problems, the famous western beer manufacturer tells the National Industrial Pollution Control Council a remarkable story of that company's efforts to combat the solid waste problem.

"One hundred and sixty-six Coors distributors operating throughout our eleven western state marketing areas . . . continue to receive from the public over two million pounds of aluminum beverage containers a month for recycling," Coors reports in a letter to the NIPCC executive director.

The firm's marketing states are Colorado, Wyoming, Kansas, California, Utah, Idaho, New Mexico, Oklahoma, Nevada, Arizona and half of Texas.

Coors distributors also continue to pay the public $200,000 a month for helping fight litter and solid waste through the recycling of aluminum cans and Coors bottles.

Through the first three quarters of 1972, aluminum collections in the Coors cash-for-cans program totaled 22,273,364 pounds, nearly 79 percent ahead of the 12,464,237 pounds collected during the same period of 1971.

The resulting accumulated payout, at the dime-a-pound cash incentive offer which fuels the program, is $4,597,327. Much of that money has been paid to civic and youth groups which have used the funds for community causes.

At an average 24 aluminum cans per pound, the number of containers salvaged from the Nation's litter and solid waste steam now totals in excess of 1.1 billion cans.

"The figures prove beyond doubt that the recycling concept has found favor and support from literally hundreds of thousands of ecology-conscious Americans," says Coors.

Moreover, in expanding its Brewing Industry Recycling Program for Colorado, Coors Colorado Distributor Reclamation Centers will accept from the public any beer containers returned for recycyling. Coors Distributors are paying the public 10 cents per pound for any steel beer cans.

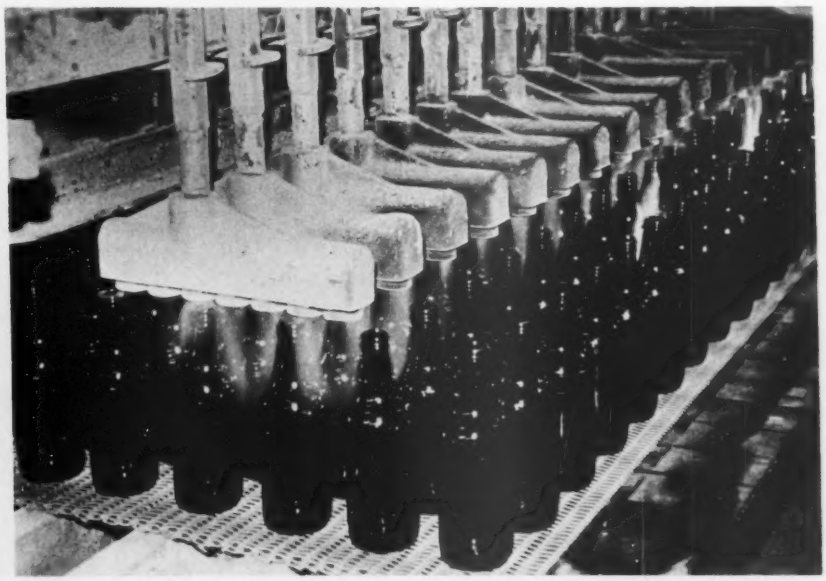
"We feel this commitment on our part to recycle all beer containers in Colorado might serve as an example to other members of the brewing and soft drink industries to start similar programs in other states in a concerted effort to help fight litter and solid waste," Coors states.

Further, the manufacturer's commitments to pollution control include installation of a working clean burning roller drum incineration process.

Clean air

The operation of Coors Industries requires steam power in large quantities. At Coors, a mammoth six-story, three boiler plant, capable of producing 600,000 pounds of steam per hour, supplies steam power needs. Pollution from the plant is minimal because the boilers are natural gas fired. The only emission from the plant's stacks

GLASS LITTER—*Coors also markets its products in glass bottles. At the brewery these bottles are separated according to their reusability and processed.*



UNUSABLES RECYCLED—*Even Coors' unusable bottles continue down the recycling road. They are melted down into cullet which becomes a major component of new bottles. And research is being conducted to construct new bottles with greater amounts of cullet, one step in the process of reusing everything.*

is almost invisible waves of heat.

For the most part, Coors power plant has been able to operate on natural gas all but approximately two weeks each year. Since the switch from natural gas to oil may be required from time to time, plans are underway to monitor all Coors stacks to assure that all emissions meet satisfactory environmental levels.

Preventive practices to assure clean air operations are also carried over to Coors motor vehicles. Through a tight maintenance program, vehicles are regularly checked to insure reduced emissions. Coors operates a number of vehicles within the plant area and, while most roads are paved, unsurfaced roads are continually watered by two full time tank trucks to prevent dust.

Glass recycling

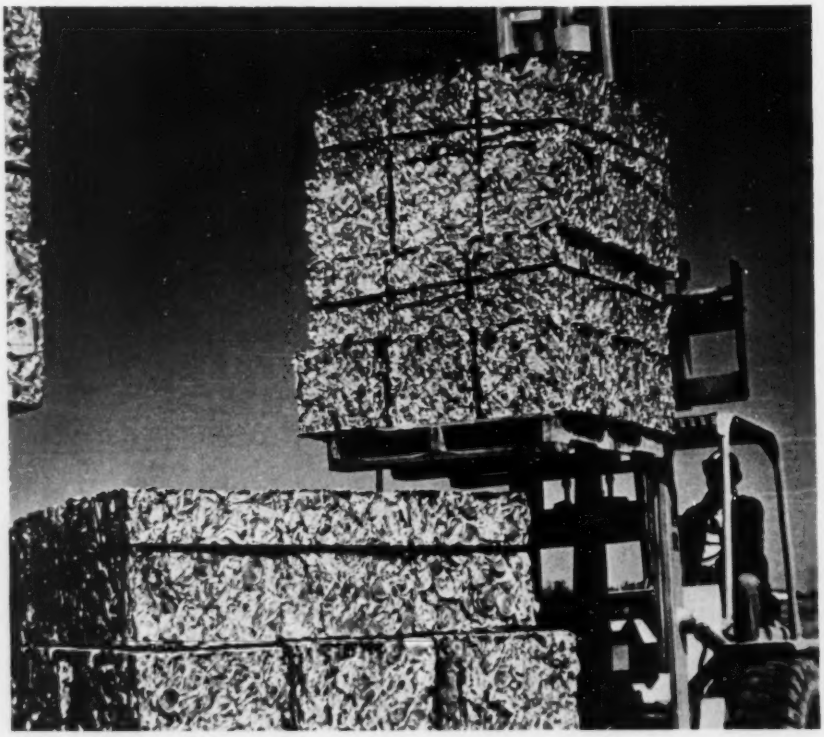
Under the plan, Coors bottles are redeemable for one cent each through any cooperating retailer or Coors distributor. Records show that even though the program is relatively new, 60 percent of the bottles are being returned.

At the brewery, returnable bottles are separated according to their reusability. After a thorough check, bottles approved for reuse are cleaned, sterilized and refilled. Substandard bottles — those chipped, cracked or incapable of approved cleaning—are routed for recycling.

An independent glass manufacturer located near the brewery, takes these substandard bottles and crushes them into a product called cullet—a major component of new bottles. Currently, from 25 to 30 percent of raw material going into new Coors bottles is cullet. Research, so that even a higher percentage of cullet can be used, is underway.

A new package called the Stik-Pak, consisting of six cans of beer held together with drops of glue, is in the developmental stage.

ALUMINUM MOUNTAINS—*Coors' effort has literally moved mountains of aluminum containers. In two years the program has meant recovery of more than a billion containers for recycling. Coors pays ten cents per pound for the aluminum. That adds up to $4 million the company has paid civic groups and individuals for their efforts to rid the landscape of litter and help the environment.*



RECOVERED LITTER—*Once recovered, cans are either shredded or bailed, as shown and shipped to major aluminum manufacturers throughout the country. The containers are remelted and rerolled into new sheet stock for a return trip to the Coors Container Company where the sheet stock becomes new cans.*

New Format Planned For Anti-Pollution Firm's Conference

Pioneering a major advance in the format and effectiveness of industrial technical conferences, the Water and Wastewater Equipment Manufacturers Association will open a three-day conference in Chicago March 14.

The "Industrial Water And Pollution Conference and Exposition" is expected, according to Archie C. Adams, chairman of the WWEMA Conference Committee, to have something of genuine interest available to every person who attends, all of the time during the Conference. This has been accomplished by:

- Providing seven concurrent events to choose from.
- Careful and precise scheduling of technical papers and other events.
- Separating the technical papers from the normal question and answer period which follows.
- Keeping all events on schedule as shown in the program.

Working with Dr. Edward H. Bryan of the National Science Foundation, WWEMA came up with a unique foremat which will have three technical sessions, one session of round tables with authors of technical papers, two sessions of technical equipment presentations and the product exhibit.

The program includes something that answers the specific environmental needs of every businessman. The over 115 technical papers cover industrial water supply and air, water and noise pollution control.

Papers in the technical sessions will be limited to 30 minutes each with the author then scheduled for at least one hour at one of 20 concurrent round tables to answer questions and discuss his paper.

Technical equipment presentations will be scheduled at 20 minute intervals with two running concurrently. Space for the product exhibit is a sellout, according to Adams.

TECHNICAL CONFERENCE—*A display at a recent Water and Wastewater Equipment Manufacturers Association conference gives an idea of the scope of the pollution control conference scheduled for Chicago next month.*

WWEMA has been involved with environmental conferences for more than 60 years.

"Our interest is in serving an industry which has become a focal point in recent years, and one in which our members have been active since 1908," Adams concluded.

Annual Franchising Show Opens Feb. 15 In New York

The 15th annual "Start Your Own Business Exposition" will open at the New York City Coliseum Feb. 19. 15 and run through Feb. 19.

The mammoth business opportunity show will feature more than 100 ways for individuals to successfully start and manage a business. Exhibits and demonstrations of all varieties will emphasize the "be your own boss" goal.

"Since its inception," says George Arons, the show's managing director, "it has not only filled the gap between successful large business firms and individuals seeking to become their own bosses in their own businesses, but it has been one of the major factors contributing to the enormous franchise booms of the past decade and the continuing growth of franchising in the 70s."

Note For Federal Contractors

The Viet-Nam Era Veterans Readjustment Assistance Act of 1972 requires Federal contractors and first-tier subcontractors to list job openings with the United States Employment Service.

The primary purpose of this law is to expand the job opportunities that the Employment Service can make available to Viet-Nam-era veterans.

Business firms that are not affected by this directive can make a significant contribution to the Jobs for Veterans Program through voluntary support and implementation of the law's specifications.

Full details of the law can be obtained by contacting the nearest Employment Service or Regional Manpower Administration office.

Off-Campus Living Has Growing Appeal For Nation's Collegians

Living "off-campus" is becoming the "in" thing among the Nation's college students. The number of college students who lived in their own households rather than in college housing increased by about two thirds between 1966 and 1971, a new Census Bureau report shows.

A nationwide survey found that 2.4 million college students lived in their households in 1971, compared with 1.4 million in 1966. However, the number of college students who lived in college housing remained about the same, 1.8 million, over the same.

Numbers increase

The number of college students increased 33 percent, from 6.1 million to 8.1 million between 1966 and 1971, but the proportion of students living in college housing declined 6 percentage points, from 29 percent in 1966 to 23 percent in 1971.

An increasing proportion of students are increasingly establishing their own households. In both 1966 and 1971 the proportion of all college students who lived with their parents or relatives was about the same level — around 34 percent. However, the proportion of college students who maintained their own homes increased from 24 percent in 1966 to 31 percent in 1971.

The report also shows that the relative increase in the proportion of college students who lived in their own households was greater among those in two-year colleges. In 1966, 19 percent of the two-year college students maintained homes, but in 1971, 31 percent of them lived in their households. The proportionate increase among four-year college students was somewhat smaller. In 1966, 26 percent of all students enrolled in four-year colleges maintained their homes. In 1971, 31 percent did so.

The proportion of college students who lived alone or with nonrelatives did not change during the five years from 1966 to 1971, but remained at about 12 percent.

In fact, the proportion of two-year college students with such living arrangements declined from 9 percent to 4 percent during that time period. A Census Bureau report published in October shows that as college enrollment increased between 1966 and 1971, the proportion of college students who were married and living with their spouse also increased—from 21 percent to 25 percent.

For both sexes the percent of married students increased. In 1971, 29 percent of men enrolled in college were married and living with their wives, compared to 24 percent in 1966. Nineteen percent of women college students were married and living with their husbands in 1971, compared to 15 percent in 1966.

Most of these married students had households at the time of the survey. There were two million college students who were married and living with their spouses in 1971. Of these, 94 percent were living in their households, 3 percent with parents or other relatives, 1 percent in college housing and the remainder in rooming and boarding houses.

Of students who were not married, 10 percent had households, 44 percent lived with parents or other relatives, 31 percent in college housing and 16 percent in rooming or boarding houses.

Copies of "Living Arrangements of College Students," P-20, No. 245, and "Social and Economic Characteristics of Students," P-20, No. 241 are available for 55 cents from the Superintendent of Documents, Washington, D.C., 20402, or from Commerce field offices.

—Census Bureau

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Electrician
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Home with maturity, abilities and ambition.

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Minority Groups Help Spearhead Franchising Industry Upsurge

Franchise sales of goods and services in the United States are expected to reach a record $156 billion in 1973, an increase of 21 percent over sales of $128.9 billion in 1971, according to a new Commerce study which includes data on international and minority franchising for the first time.

"Franchising in the Economy, 1971-1973," prepared by the Bureau of Competitive Assessment and Business Policy, is part of an on-going program to provide government, business and the public with up-to-date facts on business trends.

Growth, sales, outlets

The report contains data on franchising growth, sales distribution, the number of outlets in each industry sector, and other pertinent data. The franchising business in several industry sectors is analyzed. For example, data has been compiled on fast food and grocery franchising, leisure and travel markets, campgrounds, hotels and motels, educational services, and emerging franchising fields.

The survey reveals that many franchisors have spearheaded drives to open doors for minority groups.

Of the 791 survey respondents, 173 franchisors reported 1,186 minority-owned franchisees. The report predicts that the entry of minorities into franchising will continue, "prompted by the inherent advantages of the franchising system—loan assistance, centralized purchasing, location analysis, management training and continued management counseling, company advertising, standardized operational methods, and recognized company image—all of which reduced risk for franchisees."

International franchising data in the publication covers operations in Canada, Mexico, Europe, Africa, Central and South America, Asia, New Zealand, Australia, and the Caribbean.

An outlook for franchising forecasts continued growth.

"Business services, in particular, are expected to increase significantly by 1980," the report said. "In 1972, receipts of business service establishments totaled an estimated $32 billion. Increasingly, businesses will need business and management consultants to provide innovative marketing ideas geared to better educated consumers and more segmented markets.

"The trend toward specialized contract services is expected to continue, boosting such business services as janitorial services, temporary help services, and employment agencies. Rapid gains in technology will stimulate private research and testing laboratories, and more advanced and more costly equipment will also bolster rental services."

In addition, the report says the mushrooming of credit in all businesses has provided a boon to the spectacular expansion of credit and collection agencies. Credit has become an integral part of the business scene, and small businesses are increasingly using services of franchised agencies for their credit and collection business.

Increasingly specialization in business services and more extensive and complicated business reporting have also contributed to the development of agencies offering accounting services, the report stated.

"The distribution of products and services through franchising will probably account for a rising share of retail and service industry receipts in the years ahead," the report concludes.

The book is available at $1 a copy from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

—Bureau of Competitive Assessment and Business Policy

FRANCHISING SUCCESS—*Largest Bonanza restaurant in Atlanta is open and on its way to success. From left are Mr. and Mrs. L. C. Crowe, owners, SBA Regional Director Wiley S. Messick, and Isaiah Washington, SBA Minority Enterprise Representative. Minorities are participating in the franchising.*

Texas Indians Turn Colorful Heritage Into Tourist Profits

In the scenic Big Thicket country of southeastern Texas, tourists can enjoy the cultural heritage of two Indian tribes long associated with friendly attitudes toward visitors.

Today the Alabama-Coushatta tribes who, despite the lack of a written language, can trace their history through colorful Indian legends to the early 1500s, are welcoming visitors in record numbers to an outstanding tourist center.

Joining in partnership with Commerce's Economic Development Administration in 1966, the Alabama-Coushatta Indians determined to preserve their heritage by sharing it with both domestic and foreign visitors. By doing so —as a practical sidelight—they are creating new jobs and incomes for their members.

With nearly $600,000 in EDA grants, the tribes developed a center which attracted an estimated 300,000 guests in 1972, the first complete year of operation.

There were at least 100 jobs for Indians during the peak season and a payroll approaching $140,000 in new income. The gross revenues amounted to more than $400,000 and the net profits to the tribal council reached about $100,000.

Success story

"This success is just the beginning of what we expect to be a much larger showing in coming years," said Carson Watt, director of tribal enterprises.

"We believe this is the finest tourist center in Southeastern Texas. We expect it to grow because the Indians who serve as visitor guides are making friends who have told us they will return with other friends."

Long range estimates place the visitor total at 650,000 by 1978 with a work force of nearly 250, and a $350,000 annual payroll.

The 4,600-acre reservation has long been noted for its scenic hillsides covered with stately pine and hardwood trees. Swamps and meandering rivers criss-cross the valleys. For many years, tribal members sought to maintain a livelihood by selling timber, but the effort fell short of its goal.

Using an EDA study as a long-range development plan, and with EDA construction grants, the tribes have preserved the existing natural attractions while adding a 30-acre lake, dam and swimming beach, picnic areas, and camping and trailer facilities.

More recently, EDA provided the principal funds to construct four buildings—all architecturally oriented to the landscape and tribal heritage.

History museum

The first building houses a museum of tribal history, recalling through drawings and other art forms the travels of the Alabama Indians from the pre-Columbian period when they took refuge across the Chattahoochee River in a place they called "Alibamy."

TRIBAL DANCES—*A young Alabama-Coushatta Indian does a war dance at the reservation near Livingston, Texas. Dances are performed daily in summer.*

CRAFTS SPECIALS—*Beaded gifts are only one of the many crafts on display for the enjoyment of visitors to the Alabama-Coushatta Indian Reservation in Texas. Here two tribal women prepare displays for visitors in the museum-craft area. The tribe is aiming for complete self-sufficiency through its tourism program by 1975.*

This was later interpreted to mean "place of rest."

Another building houses the Inn of the 12 Clans Restaurant, where native Indian food is served, and smaller dining areas. An information center and visitor facilities are offered in the remaining two structures.

Broad area covered

Attractions stretch across vast areas of the rservations, reached by specially built tourist buses and a real Indian Chief train. The train ride carries visitors through an animal kingdom with buffalo, ponies, longhorn cattle, bear, wolf and other animals. Passing through the thicket of pine trees, the train reaches swamps, baygalls and an endless number of plants native to the area.

From the buses, visitors can see a reconstructed Indian village, complete with tepees, log cabin and springs where women washed their clothes many years ago.

A reptile house contains a rare American crocodile and 22 species of snakes to delight visitors. Lectures are also offered on turtles and alligators.

An authentic dance square has been constructed and tribal leaders say they believe it is one of the most authentic in existence, patterned after those used by the tribes many years ago. The "Na-Ski-La Dancers" of the reservation perform for the visitors.

Since 1966, EDA has invested $134,175,232 in projects to stimulate economic growth and to create jobs on Indian reservations.

"We have plans for further developments—an amphitheater and an arts and crafts factory—to increase the number of year-round jobs," said Watt.

"At the rate we are going," he concluded, "I believe we can accomplish the full development in the near future."

—Economic Development Administration

WHERE CLANS MEET—*The Inn of the 12 Clans is a restaurant featuring native Indian foods perfected by the individual clans of the Alabama-Coushatta tribes now living on the Texas reservation. The building, architecturally in keeping with the forest surroundings, was constructed with the help of an EDA grant.*

Navajos Are Most Numerous Tribe Among 763,000 American Indians

More than a third—34 percent—of the American Indian population reported that they are either Navajo, Cherokee, Sioux (Dakota) or Chippewa, the 1970 census tribal count shows.

The Navajo tribe is the largest.

Approximately 20 percent of the 763,594 American Indians counted on Census Day 1970 did not report belonging to a tribe, according to the Census Bureau.

The Navajo tribe makes up about 13 percent of the total American Indian population. Cherokees, comprising 9 percent of the Indian total, and Sioux (Dakota) and Chippewas with 6 percent each, also are large tribes. Other tribes with sizable proportions of the Indian population are the Apaches, Choctaws and Pueblos, each with 3 percent of the total.

Arizona and New Mexico have the largest concentration of Navajo Indians; Cherokees are predominant in Oklahoma and California, the Sioux (Dakota) in South Dakota, and the Chippewas in Minnesota. Apaches are primarily in Arizona, the Choctaws in Oklahoma, and the Pueblos in Arizona and New Mexico.

The Census Bureau also released data on tribes in 18 states with an Indian population of 10,000 or more. The figures show that Oklahoma has the largest Indian population, followed by Arizona, California and New Mexico.

Information on race in the 1970 census was obtained principally through the use of self-identification.

The data on Indians will be reissued in a report in the 1970 Census Supplementary Series. The Census Bureau also will release more detailed data in a special report, "The American Indian" later this year.

It will include data on social and economic characteristics of Indians in the United States, by tribes and reservations, and by urban and rural residence.

A map showing the geographical distribution of the Indian population will be published early this year.

—Census Bureau

Inland Waterways Seen Bearing Most Of Increased Transport Load

"A substantial volume of the new traffic generated by economic growth will be channeled to the domestic shipping industry, with its largely congestion-free water routes, and the ports that comprise an essential element of our water network," a Maritime Administration official has projected.

Howard F. Casey, Deputy Assistant Secretary of Commerce for Maritime Affairs, noted that substantial progress has been made in fostering the development of a strong domestic water transport system in this country. The Maritime Administration has undertaken cargo studies to aid operators in pinpointing potential new markets today and in the future.

Also, a broad research and development effort that will benefit domestic shipping companies has been instituted, Casey said, ranging from improving tug-barge linkages to designing vessels capable of transiting the ice-clogged Great Lakes in winter.

"The inland waterways segment of the merchant marine has been the most vibrant one," Casey asserted, noting that "since 1940, tonnage moving on the 25,000 miles of inland waterways has more than tripled.

"In terms of ton miles, the increase has been over 800 percent," he said further. "And this growth is likely to accelerate in the years ahead."

"Our expanding economy will place more and more strain on our national transportation network—strains that land modes are unable to take," he stated, adding that American railroads, with few exceptions, do not appear to have the financial resources to expand. And future growth in the trucking industry also appears to be constrained by environmental and financial limitations on new highway construction, as well as the ever-growing congestion on present roads.

Under these circumstances, Casey concluded, water transportation should become even more attractive to potential shippers than it is now.

—Maritime Administration

First Reports From 1972 Transport Census Cover Truck Use In Four States

Business executives interested in the flow of cargo and how it's moved, can look forward to reports from the 1972 Census of Transportation.

The first data of truck usage was released in December. It covered Alabama, Arkansas, Pennsylvania and West Virginia.

In addition to major use of the vehicles, subjects covered by the report include body type, size class, year model of trucks, truck fleet size, types of fuel, and maintenance. The total number of private and commercial trucks registered in each state (as estimated by the Federal Highway Administration), the annual miles driven, and average miles per truck are also presented by usage and characteristics in each report.

Similar reports for each of the remaining states and the District of Columbia will be issued on a flow basis over the next several months. The U.S. Summary report is expected this fall.

Other surveys included in the 1972 Census of Transportation are the National Travel Survey and the Commodities Transportation Survey.

Copies of "Truck Inventory and Use, 1972 Census of Transportation," will be available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

—Census Bureau

Calendar For Businessmen

Feb. 6—Atlanta—National Maritime Council's Eastern Region Action Group will hold a unity dinner-forum. For information, Muriel Waage, Phone: 212-264-2336.

Feb. 18-21—Dallas—Opportunities Industrialization Centers of America ninth annual convocation. For information, Daniel J. Nauer. Phone: 215-843-6900.

Feb. 21—Washington, D.C.—Business Resource Centers meeting, sponsored by the Office of Minority Business Enterprise. Executives of 14 Centers will discuss ways of broadening minority access to resources in the private sector.

Feb. 24-27—Minneapolis—National Association of Regional Councils seventh annual conference. For information, Ralph Webster, NARC in Washington, Phone: 202-296-5253.

Feb. 27-28—Urbana, Ill. — Annual Transportation Highway Conference at University of Illinois. For information, Professor Danner or Professor Herrin, Department of Civil Engineering, Urbana. Phone: 217-333-1000.

Feb. 28-March 1 — Washington, D.C. — National Association of Regional Councils conference on legislation. For information, Ralph Webster, NARC, Washington, Phone: 202-296-5253.

March 11-23—South Bend, Ind.—International Council of Shopping Center Executive Development Institute at Notre Dame University. For information, Lee A. Roberts, Assistant Director, Council of Shopping Centers, Urban Affairs Department. Phone: 212-421-8181.

March 13-14—New York—Second National Training In Business and Industry Conference. For information, William A. Kulock, Phone 212-687-8540.

SCIENCE & TECHNOLOGY REPORT

- **Better U.S. railway freight flow seen with new computer system**
- **International weather study slated for next year**
- **Satellite links cold water eddies to East Coast weather**
- **$1 billion record shrimp catch seen in 1973**
- **Patents of special interest**

Patent Plan To Speed Industry Licensing

In an effort to speed the licensing of Government-owned patents by private industry, Commerce's National Technical Information Service (NTIS) has launched a patent promotion program aimed at carrying out President Nixon's patent directive.

Last March, the President directed his Science Adviser and the Secretary of Commerce to develop plans "to promote actively the licensing of Government-owned patents" and to provide the necessary incentives and mechanisms to transfer Government-owned technology to the private sector in order to increase the level of commercial productivity, to develop new products and processes, and to create new jobs.

Government agencies have been requested to send NTIS all patents and patent applications dating back to July 1, 1972. Every Wednesday NTIS presents a number and title listing of patents and patent applications available for licensing in the Federal Register. This public notice legally initiates the waiting periods necessary before licenses can be granted.

Patent and patent application bibliographic citations with abstracts are appearing in the NTIS journals, *Government Reports Topical Announcements* and the *Weekly Government Abstracts.*

Vigorous analysis

In addition, NTIS has two contractors providing vigorous analysis and evaluation of patents and patent applications submitted to NTIS for announcement. This part of the program is being funded for one year by the Economic Development Administration.

The Illinois Institute of Technology Research Institute of Chicago is preparing summary evaluations of approximately 100 patents it selects as having significant commercial application potential. The summaries will couple the technical aspects of the patent or patent application with enough lay language to stimulate interest from non-technical readers. These briefs will be distributed to prospective licensees by direct mail.

Another phase of the patent promotion program involves a contract with Battelle Laboratories of Columbus, Ohio, to select about 25 patents and patent applications on which it will develop special "communications packages." These include articles in trade magazines, slide exhibits for trade shows and technical meetings, possibly exhibitions of prototypes, and any other media deemed effective for transmitting licensing information.

This patent promotion program is expected to afford maximum and speedy commercial utilization of new Government technologies and, in the end, help the nation to regain its lead in world competition.

Better U.S. Railway Freight Flow Seen With New Computer System

Management of the nation's railroad freight flow is expected to be improved markedly by a new computer system developed for the Transportation Department by Commerce's National Bureau of Standards.

The Bureau's Technical Analysis Division has designed and programmed a package of computer programs which automatically computes the shortest rail routes over which carload traffic can be moved without transfer of the shipment. Nearly three billion tons of freight is moved each year in this country.

The new computer system will provide necessary information not only for Transportation and the railroad industry, but also for the Interstate Commerce Commission, and the research community involving the setting of freight rates, proposing regulatory legislation, and making economic and cost analyses. The computer programs and data files are public use items and are available from the Department of Transportation.

Updated data

Updated data can be stored by the computer system when new freight stations are added or old ones phased out of the railroad network. The computer programs, programmers' documentation manual, and a report describing the project's background and operation have been published by Transportation.

The U.S. railroad network, updated through 1969, consists of approximately 9,000 junctions or switching intersections on the railroad lines, approximately 20,000 track segments, and some 60,000 stations. The National Bureau of Standards constructed the short-line distancing package and used it to "mile" the 1969 waybill file. A waybill contains information such as the nature of the shipment, the name of its consignor and consignee, its origin, route, and the charges paid. It serves as a means of identification, a guide for routing, and a basis for freight accounting and many other shipping statistics.

Short-line data

Prior to 1967, essentially the same short-line distance data were available to the Congress, the railway industry and its associations, and government regulatory agencies. However, the system was never fully automated, and therefore information was sometimes inaccurate and outdated. Standards brought the data on the entire continental U.S. rail network up to date as of 1969 and developed an automated procedure for keeping the system permanently updated.

After the data on the U.S. rail network was updated, the Bureau developed a package of sophisticated computer software to compute minimum routes. The short-line distances calculated by the package were validated by comparing each short-line distance with a straight-line distance such as city-to-city and station-to-station. When a particular short-line distance deviated beyond allowable errors limits, it was discarded, and other means were used to bring that short-line distance into required agreement with the straight-line distance standard.

The Department of Transportation intends to apply its experience gained with computerized short-line distancing to allied problems in the nation's rail freight transportation system. Already the many requests from the Association of American Railroads and various individual railroads attest to the acceptance and importance of this work.

—National Bureau of Standards

CONSOLE CONTROL—*Chesapeake & Ohio Railway freight cars are moved in the Fitzpatrick Yards at Russell, Ky., as the controller mans his traffic console. Marked improvement is expected once the nation's railroads introduce a computer system developed by Commerce's National Bureau of Standards to manage the freight flow.*

Weather Study To Affect Future Forecasting, Pollutants Assessment

Future long-range weather prediction and an assessment of the long-term effects of pollutants on the atmosphere will depend in part on the outcome of what is to be the largest and most complex international meteorological experiment ever undertaken. It is scheduled to begin in June 1974. One third of the earth's tropical belt will be under intensive observations during the experiment.

Called GATE—for GARP Atlantic Tropical Experiment—the planned project is the first major international field experiment in the Global Atmospheric Research Program (GARP) of the World Meteorological Organization and the International Council of Scientific Unions.

Coordination of the U.S. participation in the experiment will be handled by Commerce's National Oceanic and Atmospheric Administration.

Beginning June 15 and running to September 30, 1974, the GATE experiment will employ some 25 to 30 ships, a dozen aircraft, and 75 to 100 land stations, as well as satellites and instrumented ocean buoys. Together they will gather data over the tropical Atlantic and adjacent land areas for a study of the behavior of cloud clusters and their role in the larger circulation of the atmosphere.

Primary objective of the GARP Atlantic Tropical Experiment is to gain the increased knowledge of the meteorology of the equatorial belt needed to understand the atmospheric circulation as a whole. Such knowledge would then be used to advance understanding of tropical meteorology, hurricanes, and other storms, to improve forecast techniques for equatorial regions, and to develop the models and observing system needed to provide reliable numerical forecasts for a week or two in advance.

The GATE experimental area will extend approximately from the west coast of Latin America to the east coast of Africa. At the western end the area includes coastal and island stations in the Caribbean and part of the Gulf of Mexico.

In this area, the existing network of land stations is being augmented under the World Meteorological Organization's Voluntary Assistance Program, and temporary or mobile stations may be added to provide the coverage required by the GATE project. Over the tropical Atlantic Ocean, ships will be deployed to make surface and upper-air observations. Satellites will observe the entire area, night and day.

Cloud clusters

Although the surface of the tropical ocean is relatively homogeneous over broad areas, the cloud systems which transport heat and moisture from near the surface to higher levels are well organized. Smallest of these are the individual cumulonimbus cells up to 10 kilometers across, which are often found in rings or lines extending as far as 100 kilometers. The rings or lines cluster to form larger systems—sometimes called "cloud clusters."

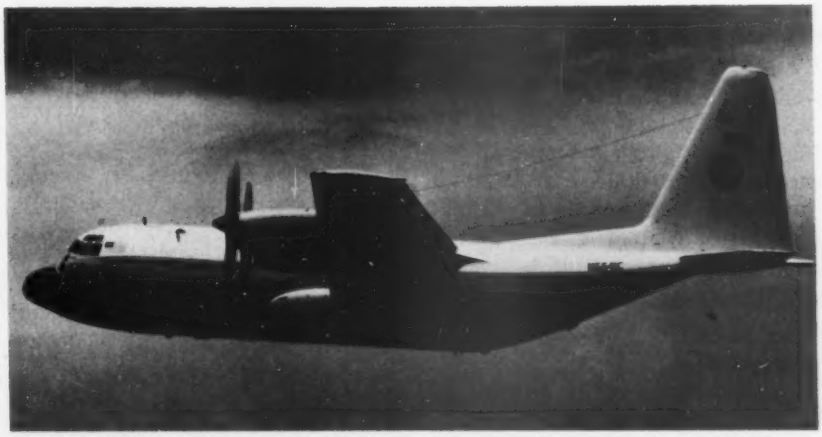
GATE is being designed to describe the internal structure and life cycle of the clusters and to relate them to larger events in the tropical atmosphere.

The goals of GATE require a farflung observing network to define the large-scale atmospheric disturbances, as well as a dense network to examine the internal structure of cloud clusters and their effect on the immediate environment. To provide the required observations, a composite network has been designed, including geostationary and polar-orbiting satellites, an augmented World Weather Watch network of land stations, a special network of ship stations, instrumented aircraft, and balloon and buoy systems.

Nations planning to commit ships to the experiment are Brazil, Canada, Colombia, France, the Federal Republic of Germany, Mexico, the Netherlands, Portugal, USSR, United Kingdom, U.S., and Venezuela.

Five U.S. vessels are scheduled to participate including NOAA Ships *Oceanographer* and *Discoverer*.

Aircraft from various participants including the U.S. will be used to investigate organized convective cloud systems in more de-



AIRBORNE DATA GATHERER—*Among U.S. aircraft scheduled to participate in the GARP Atlantic Tropical Experiment is this C-130 from NOAA's Research Flight Facility. Aircraft will be used to investigate organized convective cloud systems in more detail than is possible from ships.*

tail than is possible from the ship network.

A key element in the experiment is the Synchronous Meteorological Satellite, providing nearly continuous images, day and night, of cloud cover over an entire hemisphere, information on surface temperatures, and collection and transmission of data. One such spacecraft is scheduled for launch by the National Aeronautics and Space Administration in October, another early in 1974.

Polar-orbiting satellites

Polar-orbiting satellites expected to be operational during the GATE project are the NOAA series and the USSR's Meteor spacecraft. NOAA satellites will provide day and night images and vertical temperature profiles, while the Meteor vehicles will furnish direct television and infrared cloud images over the experimental area.

Each participating nation will process the data it collects and turn it over to a GATE Data Center, which then will catalog, integrate, validate, and reformat the national data sets. The resulting complete GATE data set is expected to be available for archiving at World Data Centers about two years after completion of the experiment.

Following GATE, an international global observing experiment to be known as the First GARP Global Experiment is scheduled to be conducted about 1977 to provide the necessary data for developing, testing, and improving the global mathematical models which are the fundamental tools for understanding and predicting the long-term atmospheric behavior. —*NOAA*

Inventors Day Is Set

February 11 is National Inventors Day recognizing the valuable contribution of inventors to the economic growth and technical development of the U.S. It falls on the birthday of Thomas A. Edison whose inventions were granted 1,093 patents, the highest awarded to any individual inventor.

Satellite Links Cold Water Eddies To East Coast Weather Conditions

Continuing study of the phenomena discovered off the Atlantic coast known as cold water eddies has now established a definite link between the eddies and the weather.

Dr. Alan E. Strong, an oceanographer at the National Environmental Satellite Service of Commerce's National Oceanic and Atmospheric Administration (NOAA), says it has now been determined from observations made by a NOAA environmental satellite launched October 15 that cold water eddies affect some low-lying clouds over the ocean.

"The cold water eddy observed by the satellite apparently dissipated trade wind cumulus clouds a few thousand feet above the surface," Strong points out. "The 1½ to 2 degrees difference in surface temperature in the cold water eddy compared with the water surrounding it is apparently sufficient at times to dissipate low-lying clouds."

The NOAA scientist says that "just as warm water can generate clouds, the reverse is also true. Since the water in the eddy is a little colder than the atmosphere, when the warmer air moves over the cold water, it suppresses cloud formations, sometimes to the point of dissipating them," he adds.

Oceanographers have been attempting to determine what effect the gigantic eddies have on east coast weather as well as on climate, fishing and shipping after they are formed by breaking through the warm Gulf Stream.

Observed and monitored

After the discovery and subsequent tracking of the first cold water eddy in October 1970, a second was observed in February 1972, and last July the NOAA Ship *Mt Mitchell* tentatively reported it had detected Eddy No. 3. These also have been tracked. Two others have also apparently been observed and will be monitored.

Edward Corton, staff assistant in the Applications Research Division, of the Naval Oceanographic Office, reports that one eddy was detected July 28 near the Norfolk to Bermuda ship lane 300 miles southeast of Cape Hatteras, N.C.,

Fishery Management Conference To Meet

More than 60 U.S. fishery experts are expected to attend a Technical Conference on Fishery Management and Development sponsored by the United Nations' Food and Agriculture Organization Feb. 13-23 in Vancouver.

The first of its kind in nearly 20 years, the conference will provide a forum for the expression of views on the current status of the world's marine and freshwater fishery resources, and the principles and techniques of fishery resource management. Sponsors and participants view the Vancouver meeting as a unique opportunity to review the many evolutions that have taken place since the last discussions were held at Rome, Italy, in 1955. In the intervening years, the world's annual fish catch has more than doubled and marine environmental problems have multiplied and become increasingly urgent.

Scientists attending the conference, including nine from the National Marine Fisheries Service of Commerce's National Oceanic and Atmospheric Administration, will address four principal subjects: scientific basis and methodology for fishery management and development; economic and institutional aspects; exploiting new resources and developing fishery industries; and regional and other case studies. —*NOAA*

and possibly a second somewhat farther north.

Cold water eddies are calm bodies of water which revolve counter-clockwise off the Atlantic coast traveling southwestward at a speed of one to two miles a day. Their huge size can be gauged from estimates of Eddy No. 1 said to have a circumference of 250-300 miles with a diameter of 85 to 100 miles. It extended from the surface of the water to a depth of two to three miles or more, carrying a volume of water equal to that of the Gulf Stream flowing past Cape Hatteras over a 10-day period. The Gulf Stream's volume at Cape Hatteras approximates that of 2,000 Mississippi Rivers with a flow of 100 billion tons of water per hour, 22 times as large as all the rivers combined of the entire earth.

Coming south

Strong reported last August indications of a number of cold water eddies coming south. He said the surface water in Eddy No. 2 was about 65 degrees Fahrenheit, some eight degrees cooler than the surrounding sea. He added then that "there is a possibility that these huge eddies affect the weather along the Eastern Seaboard but we don't know enough about these features to establish any relationship to weather."

Now, said Strong, using a NASA earth-synchronous satellite over the Equator, we have witnessed a suppression effect on the low-lying cumulus cloud cover caused by the cold eddies. The effect is a local one and similar to the cloud suppression noted over Lake Okeechobee during a typical Florida summer day.

"Our new satellite, launched in October, should provide an important assist in determining the extent of this effect," he added. The satellite, he said, provides "daily very high resolution infrared imagery. It can sense the temperature of the water, providing finer definition than has been possible before, and follow the progress of the eddies as they move south."

As the eddies move toward the equator, their surface water warms up and approaches that of the surrounding water. However, their water beneath the surface continues to remain colder than the surrounding water and their progress south can only be detected by means of measurements from ships. Strong says that by the time the eddies reach the latitude of St. Augustine, Fla., they are difficult for a satellite to detect.

—NOAA

U.S. Shrimp Industry Can Expect To Make $1 Billion Record Catch

U.S. shrimp fishermen are expected to make a record catch in 1973 worth more than $1 billion at wholesale to the U.S. economy, according to Philip M. Roedel, Director of the National Marine Fisheries Service of Commerce's National Oceanic and Atmospheric Administration.

The estimate stems from NMFS studies of past increases in shrimp catches and values, including the recently assembled preliminary catch statistics for 1972. They reveal another record year for the U.S. shrimp industry, placing the expected total value of the 1972 shrimp crop at between $955 and $974 million.

"No fishery in the United States or anywhere in the world can match the performance, sales, and market value of the shrimp industry," says Roedel. In 1967, shrimp became the first fishery in history to bring $100 million to the fisherman, NMFS records reveal.

Eight million gain

According to figures released by the fisheries agency, estimates of 1972 values show a 17 percent increase over 1971, with a catch worth $194.4 million to fishermen and vessel owners. Shrimp landings of 243 million pounds meant a gain of about eight million pounds.

State-by-state figures reveal that Texas led in shrimp landings, displacing Louisiana, the leader for the previous three years. Among other Gulf Coast states, Florida and Alabama catches advanced while the Mississippi catch lessened. Despite a decline in Alaska's catch, the grand total for northern shrimp landings (79 million pounds) showed an increase of six million pounds over the previous year, owing to a trebled production in Washington-Oregon-California waters.

Consumer demand

In the marketplace, U.S. consumer demand for shrimp ran six percent higher than in 1971, showing an increase of 24 million pounds. The U.S. consumer is apparently eating about 420 million pounds of shrimp annually or more than one million pounds per day. The demand for shrimp has increased by an average of 5 percent in each of the past five years. Prices in the same period have advanced by 6 percent per year. Similar increases are expected in 1973.

These figures are clear indicators of an upturn in an already booming business, the fisheries director said. He warned the shrimp industry of possible pitfalls to come, however, pointing out that improvement is needed in marketing and merchandising techniques for certain shrimp products, and that international competition for shrimp is intensifying. Japan and Western Europe represent challenges to U.S. production of shrimp, Roedel said, adding that he hoped the U.S. shrimp industry was prepared to meet and cope with these formidable competitors.

—NOAA

Patents Of Special Interest

Recent patents issued by the U.S. Patent Office included:

Fence post drive. A fence post driver for driving fence posts, including replacement posts for an existing fence having a number of parallel strands, and a lifting mechanism which repeatedly elevates a hammer which when released, falls by gravity to hammer the fence post into the ground to the desired depth. The driver includes a post guiding member which is stationary with respect to the ground during the driving operation and formed with a vertically upstanding back portion and a pair of side portions secured to the back portion. Notches formed in the side portions align with the individual strands of the fence which are positioned between the post and the back portion of the post guiding member, so that the driver may operate on the opposite side of the fence with respect to the post being driven. Patent No. 3,700,047 issued to Michael A. Gartner, Route 1, P.O. Box 10, St. Anthony, N.D.

Oil removal device. A buoyant oil-removal device for use with a floating oil confining barrier on a water surface with oil slicks of substantial thickness floating thereon, the device having oil in flow ports (of lesser vertical height than the oil slick thickness) with the ports normally floated at a level intermediate the thickness of the oil slick to provide inflow of the water-floated oil slick and to minimize either water or air inflow through said ports whether the water is calm or disturbed by waves, and designed to collect oil from the water surface at a rate which is maximized subject to the requirement that intake of water and air is minimized. The device has a longest overall dimension of not more than one-fourth of the wavelength of the shortest wave of significant amplitude, and includes a generally H-shaped skimmer structure; each arm portion of the structure is of generally rectangular or circular cross section, providing a number of inflow ports, each of vertical dimensions of the order from 0.04 to 0.2 of the expected slick thickness. Inflow ports preferably are positioned immediately adjacent the top surface of the structure, and are horizontally elongated. The device is provided with a flexible, buoyant suctioning hose communicating with the inflow ports for the removal of oil. Patent No. 3,706,382 issued to Ralph H. Cross III, and others of Lexington, Mass., and assigned to David Parks Hoult, and others of Wellesley, Mass.

Patents numbering 2,728,913 to 2,733,438 expired during January. Upon the expiration of the 17-year period covered by the patent, the invention passes into the public domain and may be made, used or sold by the public without payment of any royalty, or infringement of the inventors exclusive patent rights.

Abstracts and drawings of patents are published as they are issued in the *Patent Office Gazette* each Tuesday. More than 1,600 patents are issued each week. Trademarks are published in the *Trademark Official Gazette*. Copies of the *Patent Official Gazette* and the *Trademark Official Gazette* may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Science Calendar

March 5-6—Louisville, Ky.—Executive Inn Motor Hotel. Third Annual Environmental Engineering and Science Conference. Sponsored by University of Louisville and the International Association for Pollution Control.

March 14-16—Chicago, Ill.—Conrad Hilton Hotel. Industrial Water & Pollution Conference and Exposition. Sponsored by Water and Wastewater Equipment Manufacturers Assn.

March 19-21—Gaithersburg, Md.—National Bureau of Standards. National Roofing Technology Conference.

March 23-25—Hill City, Kan.—Mid-America New Ideas Fair, Graham County Fair Grounds. Information: Hill City Chamber of Commerce, Hill City, Kan.

March 27 — Gaithersburg, Md. — National Bureau of Standards. ANSI Committee on Consumer Education. Contact: T. W. Lashof, 921-2983.

April 4—Gaithersburg, Md. — National Bureau of Standards. Minicomputer Symposium. Contact: Eric Swarthe, 921-3545.

April 4-7 — San Mateo, Calif. — Northern California Industrial Exposition, Hall of Inventions. Information: Northern California Industrial Exposition, Freeman and Associates, 77 Jack London Square, Oakland, Calif.

April 9-10 — Gaithersburg, Md. — National Bureau of Standards. Federal Information Resources Conference.

April 23-26 — Washington, D.C. — Sheraton Park Hotel. American Physical Society. Contact: K. G. Kessler, 921-2001, or W. R. Tilley, 921-2493.

May 6-11—Hartford, Conn. — Annual meeting of the National Conference of States on Building Codes and Standards. Contact: NCSBCS Secretariat, Center for Building Technology, NBS, Washington, D.C., 20234.

May 8-9—Gaithersburg, Md.—National Bureau of Standards. Color & Appearance Symposium. Contact: T. W. Lashof, 921-2983.

INTERNATIONAL COMMERCE REPORT

- **U.S. food process equipment price-competitive in Scandinavia**
- **Trade Mission report on hospital equipment market in Africa**
- **Economic trends in Indonesia, Iran, Argentina, New Zealand**
- **Schedule of upcoming Commerce Department overseas trade promotions**
- **Investment, sales leads from around the world**

U.S. Position Weakens In World Markets

Total purchases of foreign goods by this country's leading trading partners rose significantly during the latest 12-month period for which data are available. In terms of U.S. dollars, virtually all the nations listed in the accompanying table reported higher imports, with more than half posting increments of at least ten percent. When these imports are measured in each country's own currency, however, gains become fewer and increases generally smaller because of the appreciation of most local monetary units relative to the dollar following the currency shifts in December 1971.

Even by the latter yardstick, however, several of the major traders notably stepped up their foreign purchases. Canada led the way with a rise of one fifth, followed by France, the United Kingdom, Italy, and Belgium-Luxembourg with increases ranging from one sixth to one tenth. Conversely, arrivals in Japan held even.

Purchases of U.S. goods were similarly affected by measurement at the new exchange rates in that increases in dollar values were larger and more widespread than when expressed in national currencies. Even so, imports from this country rose in only about half the nation's principal markets. In local currency terms, moreover, declines predominated, with gains substantial in few countries. As a result, the U.S. relative position deteriorated on a wide scale.

Business conditions in most of the industrial nations have continued to improve through 1972, especially in Japan, while the economies of France and Canada have remained strong. Despite the expansion, however, unemployment persists in many countries and inflationary pressures appear to be gaining momentum. Further, economic growth has failed in several areas to stimulate any notable pickup in demand for U.S. products.

Although Canadian purchases from the United States, measured

1972 Trade Figures

The 1972 U.S. balance of merchandise trade, as reported by the Commerce Department's Bureau of the Census, shows an export total, excluding military grant-aid shipments, of $49,116 million, and an import total of $55,555 million. The trade deficit is thus $6,439 million, as compared with $2,014 million in 1971. A detailed analysis of the 1972 trade figures by the Bureau of International Commerce will be presented in an upcoming issue.

in U.S. dollars, grew by one fifth during the latest 12-month period, those from other suppliers rose even more, resulting in some slippage in this country's position. Imports of U.S. cars, as well as automotive parts and engines for assembly, were brisk. Also aiding the advance were higher arrivals of off-road tractors, computer parts and accessories, telecommunications equipment, organic chemicals, and plastics and resins.

Japan and France were the only other nations among the top ten traders to increase their purchases of U.S. goods significantly, but this country's standing in both markets, nevertheless, declined. In Japan, the rise resulted from a larger inflow of corn, toys and games, wood, aircraft, and metalworking machinery. Aircraft and mechanical handling equipment provided the impetus for the advance in French imports from the United States. Arrivals of coal, meanwhile, fell sharply.

Both the United Kingdom and Italy marginally stepped up their purchases from this country. In the United Kingdom, the inflow of U.S. coal, aircraft engines, textile fibers, and butter surged but was largely nullified by sharp drops in arrivals of office machines and aircraft. A sizable decline in Italian imports of American planes similarly reduced the impact of gains in corn, cotton, and primary forms of iron and steel, and held the overall advance to modest proportions.

Dutch purchases in U.S. slip

Imports of U.S. goods by the Netherlands dropped slightly below their level of the previous 12-month period as purchases of corn, aircraft, and various cereals fell sharply. At the same time, the Dutch intake of U.S. soybeans and organic chemicals advanced notably.

Although both Germany and Belgium substantially stepped up their imports from other suppliers, those from the United States declined by 7 percent and 12 percent, respectively. In Germany, purchases of a wide range of U.S. goods fell below previous levels, especially nonferrous metals and scrap, tobacco, wheat, animal feedstuffs, aircraft, and office machines. Partially offsetting these decreases were higher arrivals of telecommunications equipment and power generating machinery. The loss in Belgium was in large part attributable to a sharp drop in deliveries of aircraft, although those of corn and soybeans also declined. Conversely, the inflow of medicinals and pharmaceuticals and electric machinery rose significantly.

Among the smaller developed countries, both Portugal and Spain markedly increased their purchases from this country. Portugal boosted its intake of U.S. goods by more than half, largely in aircraft. Expanded aircraft imports were also instrumental in the rise in Spain but an increase in corn purchases contributed equally. In Ireland and Finland, on the other hand, reduced imports of aircraft diminished overall purchases of U.S. goods.

The U.S. standing in Mexico dropped slightly as imports from this country continued to be sluggish. Purchases of passenger vehicles, especially unassembled units, climbed rapidly while radio and television parts for assembly and construction and mining machinery rose moderately. These gains were

World Market

The 48 markets shown below accounted for 91 percent of 1971 imports

Values in millions of dollars — Published

Country	1971 Imports			1972 Imports January through latest month				Import change in latest available 12-month period*		Reserves at end of third quarter	
	From world	From U.S.	U.S. share %	Latest month	From world	From U.S.	U.S. share %	From world %	From U.S. %	1971	1972
Germany, Fed. Rep.	34,341	3,544	10.3	Nov.	36,475	3,041	8.3	+ 17	— 7	16,991	24,166
United Kingdom	23,973	2,648	11.0	Oct.	23,130	2,393	10.3	+ 17	+ 2	6,313	6,090
France	21,247	1,800	8.5	Oct.	21,571	1,741	8.1	+ 24	+ 6	7,310	10,019
Japan	19,721	4,985	25.3	Oct.	18,987	4,771	25.1	+ 15	+ 10	13,384	16,489
Canada	16,822	11,804	70.2	Nov.	18,782	12,930	68.8	+ 23	+ 20	4,992	6,221
Italy	15,968	1,435	9.0	Sept.	13,851	1,224	8.8	+ 16	+ 2	6,666	6,414
Netherlands	15,522	1,463	9.4	Sept.	12,777	1,008	7.9	+ 14	— 1	3,607	4,906
Belgium-Luxembourg	12,866	821	6.4	Sept.	11,302	605	5.4	+ 23	— 12	3,424	4,040
Switzerland	7,221	514	7.1	Oct.	6,956	498	7.2	+ 17	+ 3	6,549	7,405
Sweden	7,083	566	8.0	Sept.	5,822	431	7.4	+ 12	— 5	998	1,402
Australia	5,256	1,161	22.1	July	2,932	643	21.9	+ 1	— 11	2,841	5,352
Spain	4,965	772	15.5	Oct.	5,424	853	15.7	+ 28	+ 18	2,948	4,694
Denmark	4,545	380	8.4	Oct.	4,012	274	6.8	+ 5	— 1	422	715
South Africa, Rep.	4,432	723	16.3	July	2,338	365	15.6	— 4	+ (3)	754	1,238
Austria	4,192	156	3.7	Oct.	4,135	131	3.2	+ 21	+ 5	2,231	2,938
Norway	4,082	244	6.0	Oct.	3,554	208	5.9	+ 8	— 4	1,125	1,352
Brazil	3,701	1,065	28.8	July	2,564	(2)	(2)	[2]+ 30	[2]+ 16	1,581	[4]3,012
Hong Kong	3,388	423	12.5	Oct.	3,189	380	11.9	+ 14	+ 5	(2)	(2)
Yugoslavia	3,317	201	6.1	Sept.	2,276	142	6.3	— 10	— 22	136	530
Singapore	2,828	360	12.7	Sept.	2,462	355	14.4	+ 13	+ 32	497	[5]676
Finland	2,795	126	4.5	Sept.	2,301	96	4.2	+ 15	— 12	579	852
India	2,409	562	23.3	Mar.	615	133	21.6	+ 11	— 7	1,128	[4]1,193
Mexico	2,407	1,479	61.4	June	1,362	814	59.8	+ 2	— 2	893	[4]1,203
Korea, Rep.	2,394	678	28.3	Aug.	1,576	419	26.6	— 2	— 18	572	686

Note: The countries shown above include the 48 major importers of U.S. merchandise in 1971 for which current data are available. In order to present comparable statistics for all countries, import data have been adjusted from an f.o.b. to a c.i.f. valuation for Australia, Canada, Panama, Philippines, Republic of South Africa, and Venezuela. Reserves include official holdings of gold and foreign exchange, the gold tranche position, and Special Drawing Rights in the International Monetary Fund.

Report

Bureau of International Commerce

into all free-world markets and 92 percent of imports from the U.S.

quarterly

Country	1971 Imports			1972 Imports January through latest month				Import change in latest available 12-month period*		Reserves at end of third quarter	
	From world	From U.S.	U.S. share %	Latest month	From world	From U.S.	U.S. share %	From world %	From U.S. %	1971	1972
Venezuela	2,151	952	44.2	Mar.	566	(2)	(2)	[3]+ 12	[3]+ 1	1,279	1,436
Greece	2,098	139	6.6	Aug.	1,434	95	6.6	+ 9	+ 49	451	844
Iran	1,871	242	13.0	Mar.	638	110	17.2	+ 23	+ 35	333	796
Argentina	1,869	414	22.2	June	918	177	19.3	+ 1	— 21	459	255
Taiwan	1,844	408	22.1	July	1,387	308	22.2	+ 34	+ 19	539	682
Ireland	1,834	158	8.6	Sept.	1,512	104	6.9	+ 10	— 16	898	985
Portugal	1,823	126	6.9	Sept.	1,451	147	10.1	+ 34	+ 63	1,731	2,229
Israel	1,808	430	23.8	Oct.	1,549	303	19.6	+ 10	— 6	749	1,100
Nigeria	1,510	212	14.0	Mar.	423	50	11.8	+ 35	+ 24	299	382
New Zealand	1,346	137	10.2	Sept.	1,106	(2)	(2)	[3]+ 8	[3]— 18	297	580
Philippines	1,316	328	24.9	Sept.	967	257	26.6	+ 5	— 4	338	457
Thailand	1,287	183	14.2	June	701	113	16.2	+ 8	— 2	878	1,028
Indonesia	1,174	177	15.1	Apr.	383	54	14.1	+ 18	+ 1	(2)	(2)
Malaysia[6]	1,112	68	6.1	May	522	33	6.4	+ 6	— 22	856	895
Turkey	1,088	129	11.8	Sept.	1,079	97	9.0	+ 22	— 14	562	1,134
Pakistan[7]	926	212	22.9	Sept.	485	110	22.6	— 31	— 49	215	260
Colombia	921	375	40.7	June	410	(2)	(2)	[3]+ 9	[3]+ 21	166	254
Egypt	890	[8] 48	5.4	June	508	(2)	(2)	[3]+ 13	[3]— 1	187	182
Peru	753	220	29.3	Aug.	529	161	30.4	+ 15	+ 7	232	[4]287
Morocco	698	99	14.2	Aug.	503	51	10.1	+ 3	— 18	176	276
Trinidad & Tobago	657	115	17.5	June	396	72	18.1	+ 28	+ 32	63	70
Panama	389	137	35.2	May	168	61	36.1	+ 9	+ 2	397	[9]666
Costa Rica	350	114	32.7	Aug.	245	76	30.9	+ 13	+ 5	27	22
Ecuador	304	104	34.1	Feb.	55	15	26.2	+ 29	+ 29	55	109

* Compared with preceding 12-month period.
[1] Less than 0.5 percent. [2] Not available. [3] Import change in year 1971. [4] End of August. [5] End of April. [6] Import data are for West Malaysia only. [7] Data are for West Pakistan only beginning December 1971. [8] Estimated from partial year data. [9] End of June.
Source: Official trade statistics of listed countries.
International Monetary Fund, *International Financial Statistics.*

offset, however, by losses in corn, oilseeds, iron and steel scrap, internal combustion engines, and metalworking machinery.

Purchases of U.S. goods advanced strongly in several of the other developing nations, especially Iran, Singapore, Nigeria, and Taiwan, but only in the first two did the U.S. position improve. In Iran, the rise stemmed from a larger inflow of wheat, aircraft and parts, and power generating machinery. At the same time, higher arrivals in Singapore of electronic components, mostly semiconductor parts for local assembly, and nonelectric machinery helped boost overall imports from the United States. Stepped-up purchases of the latter contributed to the advance in Nigeria but aircraft also helped. Taiwan, too, recorded a larger inflow of U.S. aircraft, as well as radio and television parts for local assembly, to boost its total intake from this country.

Reserves rise one third

Official reserves of the principal U.S. trading partners included in the accompanying table approached $127 billion on Sept. 30, 1972, up one third over the total held at the same period the previous year. Germany accounted for nearly one fourth of the increase but all except five of the countries listed shared in the advance. The only two industrial nations among these few exceptions were Italy and the United Kingdom. Most major traders accrued large amounts of dollars.

Germany boosted official holdings past the $24 billion mark, a gain of more than 40 percent. This massive advance reflected capital inflows, particularly long-term, although these movements slowed notably toward the end of the third quarter of the year. Despite another large trade surplus, the country's current account showed a deficit as expenditures by German travelers abroad and transfer payments by foreign workers constituted a drain on that sector.

Japanese monetary officials reported holdings of $16.5 billion as of the end of September 1972. Only $1.1 billion of the 12-month rise of $3.1 billion occurred during January-September. For the same nine-month period in 1971, the increase had exceeded $8 billion. This apparent slowdown reflected in part Japanese Government efforts to dampen by various means the accumulation of official reserves, especially U.S. dollars. Although disrupted by a three-month seamen's strike ending in July, the country's trade was running a surplus at an annual rate of more than $8 billion through September 1972 and provided the main impetus for reserve expansion.

French reserves rose by 37 percent to over $10 billion. Exchange market purchases, especially in June and July, in support of the dollar and the pound sterling accounted for the bulk of the increase. Australia expanded its holdings by more than $2.5 billion, an advance of almost 90 percent. The inflow of capital, both investment and speculative, accounted for most of the sharp gain but a sizable trade surplus also contributed. (The Australian dollar was revalued upward by 7 percent on Dec. 23, 1972.) Canada and the Netherlands were the only other countries to boost reserves by more than $1 billion.

Among less industrial nations,

Spain increased its holdings to nearly $5 billion on the strength of foreign investment capital, the proceeds of tourism, and remittances from Spanish workers abroad. Brazil's reserves rose to record levels, buoyed by capital inflows attracted by the high rate of economic activity. Turkey doubled its holdings, due principally to larger workers' remittances from the German Federal Republic.

Italy's reserves fell by some $250 million despite a strong current account position. The decline was due to a net outflow of capital, resulting from the illegal export of Italian banknotes and the tendency of Italian importers to speed up payments and of exporters to slow down the intake of proceeds. Both factors reflected lack of confidence that the exchange rate of the lira would be maintained.

British holdings decreased by about $225 million. Most of the loss occurred in July when the Bank of England bought back from several European central banks the sterling they had acquired in support of the pound prior to its floating in June. Britain also incurred a trade deficit in each of the first three quarters of 1972. Argentine reserves again fell as the servicing of that country's debt continued to siphon away official holdings.

High Officials Speak On East-West Trade

Top level trade officials from the U.S. and the USSR will participate in a Feb. 27-28 conference in Washington exploring the new challenges in commercial relationships between the two countries.

The conference, at the Shoreham Hotel, is sponsored by the National Association of Manufacturers and the International Management and Development Institute. The latter is a Washington non-profit educational enterprise for corporate executives.

NAM board chairman Burt F. Haynes, of Rohr Industries, Inc., is conference chairman. Among the U.S. Government officials on the agenda are Peter M. Flanigan, Assistant to the President for International Economic Affairs; Willis C. Armstrong, Assistant Secretary of State for Economic Business Affairs, and Steven Lazarus, Director of Commerce Department's Bureau of East-West Trade. Ambassador Anatoly F. Dobrynin is expected to lead the Soviet presentation.

For more information, write International Management and Development Institute, Watergate Office Bldg., Suite 905, 2600 Virginia Ave., N.W., Washington, D.C., 20037.

Small Firms To Get Boost Into Exporting From Giants

A "Partners-In-Trade" program in which 25 large U.S. firms experienced in foreign trade assist smaller companies to start or expand their export efforts is now being undertaken.

The new program is under the sponsorship of the World Trade Institute at New York's World Trade Center and the National Association of Manufacturers.

Services provided

The experienced partners will provide specific marketing, product, financial and legal know-how, and act as consultants for a full year in personal conferences, workshops and special seminars. This activity will not include any formal business arrangements between the large and small firms.

Board chairman Philip B. Hofmann of Johnson & Johnson said his firm and others in the "Senior Partner" list "aren't successful exporters because they are big—but because they have know-how. We're going to give the smaller firms some of our know-how and we're going to stick with them until they're part of the export world too." Hofmann is also a commissioner of the Port Authority of New York and New Jersey that operates the World Trade Institute.

The U.S. Department of Commerce is cooperating in the program by helping to identify possible new export firms, supplying informational materials and participating in workshops and seminars. The Small Business Administration and the Export-Import Bank will also assist, as will the Federation of Export Management Companies.

The program's first workshops will begin at the World Trade Institute on March 20 and 21 with sessions on development of sales forecasts for key foreign markets. Later in the spring regional workshops are planned for Atlanta, Ga., Syracuse, N.Y., and Rutgers, N.J.

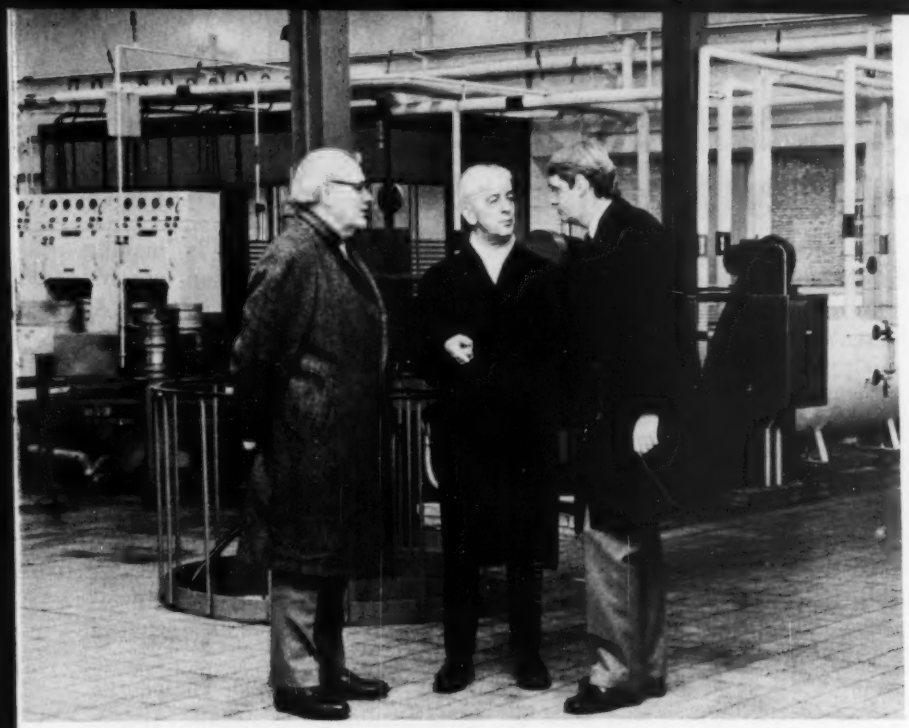
Participating firms

The 25 participating "Senior Partner" firms:

Allis Chalmers, Allied Chemical, Bank of America, Bankers Trust, Bell & Howell, Bendix, Caterpillar, Chase Manhattan Bank, Dow Chemical, Dupont, Eastman Kodak, First National City Bank, Ford.

Also General Electric, General Motors, IBM World Trade, International Harvester, Johnson & Johnson, Manufacturers Hanover Bank, Mobil Oil, Monsanto, Morgan Guaranty Trust, Pillsbury, Quaker Oats, and Warner-Lambert.

For further information on the program, write Jane Colvin, Program Director, "Partners-in-Trade," World Trade Institute, One World Trade Center, New York, N.Y., 10048.



HOW DANES MAKE BEER—*In Copenhagen, U.S. food-processing equipment mission visited the Tuborg Brewery. Touring the plant, above, are Thomas E. Belshaw (left), Belshaw Bros., Seattle; Robert G. Kemp, Commercial Attache (center), U.S. Embassy; and an official of the brewery.*

U.S. Food Machinery Wins Scandinavians, Even In Price

Despite strong European competition, the Scandinavian market is ripe for advanced U.S. food processing and packaging equipment, according to a trade mission that went to Sweden, Denmark, and Norway a few weeks ago.

► Many U.S. products can compete against European prices.

► Many types of U.S. equipment are genuinely superior—in speed, safety of operation, and overall economy of production.

► European producers do not offer to "custom-build" their equipment to meet specific plant situations—at least not to the extent that U.S. firms do.

► Scandinavian end-users and agents are willing to pay more if they are assured that the equipment will save them money in the long run.

These are the key findings of the group, whose five members estimate that sales resulting from their trip will total $4.1 million over the next two years. They also report a number of agency and distributor leads for their products.

Mission Director Harold A. McNitt is the Nordic Marketing Manager in the Commerce Department's Office of International Marketing. "The most important observation we can make from this mission's experience is that U.S. suppliers of advanced equipment are really competitive in Northern Europe," says McNitt. "The more favorable currency exchange rates established in December 1971, plus the rapid rise in European wage costs, have brought a changed situation. Many of us do not fully realize what has happened. Both the U.S. seller and the European buyer still tend to think in the old terms, that U.S. goods are 'priced out of the market.' We have an educational job on both sides of the Atlantic—to convince businessmen that for many kinds of products this is no longer true. As one mission member put it, 'U.S. prices in the bakery equipment field are running neck and neck with Western European prices.' "

Paul K. Girton, Girton Manufacturing Co., Millville, Pa., noted substantial interest in his dairy processing equipment: "I am pleasantly surprised with the market in view of the limited population. Sweden has high standards of quality and sanitation." He had the same favorable impression in Denmark and Norway.

Thomas E. Belshaw of Belshaw Brothers, Inc., Seattle, found that interest was strong in both low- and medium-capacity automatic doughnut equipment. He stressed that potential end-users in Sweden and Denmark have an interest in new machines and methods but feel that they need know-how and consultation to succeed in using them to best advantage. He concluded that in promotion of doughnut systems, "there was an interest in the total program—ingredients, production, packaging, and consultation on marketing. It probably will be necessary to include a package of people (knowledge) in with a package of equipment." In Norway, Belshaw's products are already well known and widely used.

Gerald L. Larsen, Werner Lehara, Inc., Grand Rapids, was also impressed by the vigor of the Scandinavian markets. He reported especially good prospects for candy extruders, bakery ovens, and bakery extruders, and was impressed by the interest that Finnish end-users showed in his firm's equipment. Of the mission, he said, "The work in Stockholm produced for our company in 2½ days what we would not have done in two months on our own. The trip to Gothenburg and Malmo on the Swedish West Coast was equally well done." In Denmark and Norway as well, Larsen met the top people among potential customers

for his equipment, and reports excellent sales prospects.

Alex P. Graham, Sardee Corp., Alsip, Ill., used visual aids to demonstrate his company's can-handling equipment. He found good prospects for palletizers and depalletizers in all three Scandinavian countries. "The market in Sweden will expand rapidly within the next three years for can manufacturing and the usage of cans in beer, soft drink, aerosol, and food processing, with a steady growth pattern for the next 15 to 20 years," according to Graham. Like most of the other mission members, he found that end-users in Denmark and Norway were somewhat hesitant to make decisions immediately because of uncertainties surrounding the enlargement of the European Economic Community to include Denmark (but not Norway) in 1973. Despite this cautious climate, Graham anticipates significant sales from his visit.

"The trade mission was good for me and my company," said Neil C. Brophy, General Fish Machine Co., Inc., Wakefield, Mass., adding that sales prospects for the firm's fish scaling machine are highly encouraging.

Chances Good To Expand Hospital, Medical Equipment Sales In W. Africa

In Nigeria, local distributors were actually bidding against each other to take on the U.S. lines represented by a hospital and medical equipment mission visiting several West African countries last fall.

In the Ivory Coast, where five of the six companies on the mission were new to the market, all five found interest in their products and located representation during their stay in Abidjan.

In Zaire, the businessmen were able to capitalize on planned expansion in the hospital and medical sector.

The mission agreed that sales of American hospital and medical equipment to Nigeria, the Ivory Coast, and Zaire can be increased substantially if U.S. suppliers are willing to make the necessary long-range commitments. Touring hospitals and clinics, visiting universities, and talking with federal and regional health ministries, the members were impressed by existing as well as planned health care facilities.

Africa has an urgent need for modern preventive and curative medical services and is moving rapidly in that direction, according to Mission Director James A. Moorhouse of the Commerce Department. While published budgetary expenditures for public health are not always reliable, Nigeria alone is said to be planning a medical expansion program totaling more than $60 million over the next two years. Knowledgeable observers predict an even greater outlay in view of such large projects as medical school expansion in Lagos and Ibadan.

The mission—which visited the three countries' capitals, Lagos, Abidjan, and Kinshasa, plus Kaduna and Ibadan in Nigeria—was comprised of representatives of six U.S. firms manufacturing laboratory equipment and reagents, respirators, hospital sterilizers and autoclaves, blood cell counters, diagnostic instruments, and occulometers. The business tour yielded immediate orders and sales prospects conservatively expected to exceed $1 million during the coming year.

In addition to the 20 agency agreements and direct sales leads obtained, the visit surfaced keen local interest in major health care projects such as pre-packaged field hospitals, morgues, surgical theatres, turnkey drug manufacturing plants and fully equipped laboratories.

Moorhouse reports that in all three countries visited competition for representation of the American firms was intense. U.S. exports of medical equipment to West Africa have not been heavy to date, he points out, largely through a lack of awareness of what the United States has to offer—a situation in turn attributable to the insufficient American business attention given to the area.

The mission found a prevailing local impression that U.S. com-

HOW AMERICANS CAN FOOD—*Mission member Alex P. Graham (center), Sardee Corp., Alsip, Ill., describes his company's latest canning equipment to prospective customers at the U.S. Trade Center in Stockholm.*

panies cannot provide adequate after-sales service either through lack of qualified service personnel or because of expected prolonged delays in shipping key spare parts. Price was rarely mentioned as a determining factor and decision makers are often willing to pay more for a superior product if proper maintenance can be assured and competitive credit terms arranged.

Recognizing the importance of after-sales service in any venture in Africa one company plans to have its representatives visit its European headquarters for orientation; another businessman will be bringing personnel to the United States for training, and yet another plans a return visit to West Africa to supervise the training of newly appointed indigenous service personnel.

Plan return visits

While the mission represented a considerable investment of time, the business executives recognized the long-range potential of the markets. Without exception, all participants plan return visits to Zaire, the Ivory Coast, and Nigeria and American Sterilizer's representative is planning four repeat visits within the coming year.

Mission members' reactions in a nutshell:

Thomas Wright and Karanja Mungai, Systems Operations Support, San Diego—"A tremendous potential market." Hans van Ovost, Bird Corp., Palm Springs, Calif.—"Results were beyond our expectations." Paul de Vuyst, Amsco International, Erie, Pa.—"Nigeria is a fantastic market." Edgar Hecht, Beckman Instruments, Fullerton, Calif.—"Mission was well organized." Louis Jinkins, Coulter Electronics, Hialeah, Fla.—"Long range business should be very profitable to companies willing to provide the proper representation and service facilities." Al Abbitt, Fischer Scientific, Springfield, N.J. —"American firms can do well in Africa if they work hard."

Trade Fairs, Centers

Commerce Seeks Exhibitors For Nine Overseas Shows

Commerce Department specialists are recruiting U.S. producers of a wide variety of equipment to display their goods at officially-sponsored exhibits overseas. Summaries of nine of these follow:

Data transmission equipment and input/output devices: Japan. The U.S. Trade Center in Tokyo has scheduled a June 25-30 exhibit to help U.S. manufacturers capitalize on the Nippon Telephone and Telegraph Public Corp.'s freeing of its communication lines for electronic data transmission.

The principal categories of goods to be exhibited include such items as optical character readers, optical mark readers, teletypewriters, POS terminals, facsimile terminals, intelligent terminals, acoustical computers, multiplexers, converters/concentrators, store and forward equipment, and portable access terminals.

While most data transmission equipment remains on the Ministry of International Trade and Industry's list of restricted imports, and MITI approval is required for the import of non-liberalized items, screening of applications for non-competitive (with Japanese) equipment has become lenient and approval is given almost automatically. On-line terminals are still restricted but off-line terminals were liberalized last February.

For details, call Maurice A. Shea, Jr. at 202-967-2461, or write him at BIC-232, U.S. Department of Commerce, Washington, D.C. 20230.

Lasers and electro-optics: Germany. U.S. suppliers now account for approximately 80 percent of imported laser and electro-optic equipment in Germany, one of the fastest growing markets for this type of product. The German economy is recovering from the mini-recession of 1971, and the Sept. 4-7 show LASER 73 at Munich should afford U.S. exporters with the opportunity to get into this expanding market at the beginning of a cyclical upswing.

For details on participating, contact Roswitha Augusta at BIC-226, U.S. Department of Commerce, Washington, D.C. 20230.

Medical management systems and equipment, Germany. Germany's hospital modernization and expansion program for 1973 to 1975 is expected to cost well over $2 billion. Prospects look good for U.S. producers of highly advanced and sophisticated products especially in the following areas: Patient care equipment, EDP equipment and monitoring systems, disposables, sterilization equipment, pollution and contagion control equipment, and building services, housekeeping, and food preparation equipment. To help U.S. producers of this equipment win their share of the burgeoning German market, the U.S. Trade Center at Frankfurt has scheduled a Sept. 10-14 exhibit. For details contact Don Schmadel at BIC-226, U.S. Department of Commerce, Washington, D.C. 20230.

Aerospace and airport equipment: Brazil. Latin America's first International Aerospace Show, scheduled for Sao Paulo Sept. 14-23, will attract commercial and both civilian and military government representatives from throughout Latin America. The Show will have an industrial exhibition at Anhembi Park, and a flight line exposition at Sao Jose dos Campos.

Brazil's size (comparable to the continental U.S.), its relatively large population of approximately

100 million, and the deficiencies of its land communications and transportation systems make air travel an important element in the country's plans for national integration and economic development. The Brazilian Government seems to feel that to sustain the nation's accelerated pace of economic growth, a greatly improved air transportation system is required.

The U.S. Exhibition at Anhembi Park will comprise 75 booths (3x4 meters each) where U.S. firms will display their latest equipment. The focus will be on ground and airborne equipment and instruments, airport equipment, and aircraft parts, assemblies, and accessories.

For more information, call Ted Johnson at 202-967-3871, 3872 or 5030, or write: U.S. Dept. of Commerce, BIC-242, Washington, D.C. 20230. Exhibitors interested in the flight line exposition should contact Ralph Whitener & Co. in Washington, D.C., 202-833-9440.

Industrial and commercial refrigeration and air-conditioning equipment and components: France. Market research indicates that the French market for refrigeration and air-conditioning equipment is expanding at a rapid rate. The market in 1971 was valued at $137 million, and is expected to increase by 43 percent by 1975, reaching an annual level of almost $200 million. The U.S. Trade Center in Paris will hold a showing of this type of equipment Sept. 17-21.

France now has the fastest growing economy in Western Europe, and as France modernizes and the standard of living increases, construction of new supermarkets, shopping centers, quick food service facilities, hotels, office buildings, schools, and factories creates a need for modern refrigeration and air conditioning equipment. The market is wide open to foreign suppliers, with the U.S. holding a position as a leading supplier. Research indicates that package unitary air-conditioners, water chillers, compressors, cold chain systems, quick freeze equipment, vehicle refrigeration systems, flake and icecube equipment, refrigerated display cases, and other related products have sales potential in France.

For details, write William S. Gaines at BIC-226, U.S. Department of Commerce, Washington, D.C. 20230.

Audio visual equipment: Germany. With current educational program expansion in both formal education and industrial training in West Germany, the growth in the use of audio-visual equipment is expected to double to approximately $300 million by 1975. The shortage of teachers and the demand for more efficient education and training methods require an increasing use of modern teaching aids. To help American suppliers fill that need, the U.S. Trade Center at Frankfurt has scheduled an Oct. 11-16 exhibit of audio-visual equipment.

U.S. audio-visual equipment is in the forefront of developments for the West German market. This exhibition, to be held concurrently with the Frankfurt Book Fair, will give U.S. manufacturers, especially those not yet in the West German market, an opportunity to gain or enlarge their share of this rapidly growing market.

Contact Loretta Allison at 202-967-4511, or write her at BIC-226, U.S. Department of Commerce, Washington, D.C. 20230.

Air, water and noise measurement and control equipment: Germany. ENVITEC 73, scheduled for Oct. 8-14 in Duesseldorf, is a comprehensive specialized trade show in the field of environmental protection, covering air, water and noise measurement and control equipment. Protecting the environment is a major concern in Germany, and approximately $9 billion will be spent during the 1971-75 period for pollution control equipment. To take part in this exhibit at the Duesseldorf Fairgrounds, call Robert Levine at 202-967-4056, or write him at BIC-232, U.S. Department of Commerce, Washington, D.C. 20230.

Systems for automation in the metals industries: Germany. Automation systems and components are in demand in West Germany by the machine tool industry and other metal industries from iron and steel production to finished product manufacturing such as automobiles and household appliances. The U.S. Trade Center at Frankfurt has scheduled a Nov. 12-16 showing of this type of equipment to help U.S. suppliers cash in on the opportunities the German market offers.

Highest sales potential is indicated for NC machine tools and controls, transfer systems and robots, assembly machines, instruments, sensing devices, automated test equipment, direct numerical control (DNC), electric drives and electro-hydraulic power, machining centers for machine tools, adaptive controls, computer-aided-manufacturing (CAM) systems, sorting devices, machine protection devices, servomechanisms and computer software for automation systems.

For details, contact Charles M. Whitley at BIC-226, U.S. Department of Commerce, Washington, D.C. 20230.

Microcircuit design, testing and production: Germany. Following the outstanding success of microcircuit exhibitors at Electronica '72, the U.S. Department of Commerce is presenting a Dec. 10-14 exhibition at the Frankfurt Trade Center especially for this advanced segment of the electronics industry. The West German electronics industry is putting more microcircuits into consumer goods than in the U.S. where the 1C was invented. Electronica '72 demonstrated the strength of microelectronics with literally hundreds of exhibitors of chips, MOS, MSI, LSI, linear, bypolar, digital, hybrid, thin and thick film com-

ponents and of micro production equipment.

This exhibition is planned to help U.S. firms get into and keep up with this very rapidly expanding, highly competitive micro-electronics market. The U.S. still has a technological lead but its lead time is getting shorter every year. Firms wishing to get into the West German market while production, delivery time and technology are still in their favor should contact Don Schmadel at BIC-226, U.S. Department of Commerce, Washington, D.C. 20230.

Pollution Control Show In Toronto Gives Entry To Burgeoning Market

Toronto's second annual Pollution Control Show will be held at Exhibition Park from May 15-17. The Show was first produced last June, and is the most comprehensive exhibition of its type in Canada. It will be produced and managed by Ontario Marketing Productions Ltd., and sponsored by the Pollution Control Assn. of Ontario.

Anti-pollution equipment and products will be displayed and demonstrated. Various levels of government will explain their contribution to preserving the environment, and non-profit organizations will present special features emphasizing research and education. An ecology theater will present films describing exhibitors' environmental programs and special award-winning films on pollution. A three-day conference will offer seminars on various aspects of pollution control.

According to the Show management, last year in Ontario alone business and industry spent or committed C$120 million to meet Government pollution standards, and in the next ten years pollution control spending in Canada is estimated at C$5.5 to C$6.5 billion.

For details contact the U.S. Consulate General in Toronto.

HOW IT TICKS—*VIC sales representative C. Morton-Fineham (l.) explains one of his firm's vapor absorption air pollution control systems to a prospective customer at exhibit of U.S. pollution control equipment at the Stockholm Trade Center.*

U.S. Anti-Pollution Items Score At Stockholm Show

U.S. firms that were newcomers to the Scandinavian market found strong demand for their products at a recent showing of pollution control equipment at the U.S. Trade Center in Stockholm.

Eighteen of the 36 exhibitors were seeking representation in one or more countries of the Scandinavian area; a total of 18 agreements were signed during the exhibit, and negotiations were opened with 42 other prospective representatives. New-to-market firms expect more than $1.2 million in Scandinavian sales during the twelve months following the exhibit.

VIC manufacturing Co. of Minneapolis projected $400,000 in sales for the year following the exhibit and $1.5 million during the second year. VIC representative Charles Morton-Fineham rated the exhibition "first class." His firm had to select four representatives for the Scandinavian markets from among the 15 prospective agents contacted at the show.

"This is the fastest and most inexpensive means of entering so great a foreign market in a very short time. Trade Center cooperation exceeded our greatest expectations," said Martin A. Jacobs, president of Modern Energy Corp., Philadelphia.

APSEE Inc. of Reseda, Calif. signed agents for Norway and Denmark and created a sales subsidiary in Stockholm. Karl-Adolf Samuelson, of the newly-formed unit, said that he had made some "surprisingly productive" contacts at the show which he could not have expected to make in any other way.

The 923 trade visitors to the show included a planeload of Norwegian businessmen who came on a special charter flight from Oslo.

Worldwide Business Outlook

Indonesia's Steady Growth Offers Selling Challenge

Indonesia continues to make significant economic progress.

Joseph A. Harary, Commercial Attache at the U.S. Embassy in Jakarta, notes that the economy has been improving since the Suharto Administration came to power in 1966. Inflation, which had reached a rate of 635 percent in 1966, has been drastically reduced.

The foreign trade of Indonesia has continued to move upward. It reached a total of $2,563 million in 1971 compared with $2,303 million in 1970, a rise of 11 percent. Imports in 1971 were valued at $1,256 million.

New sales record

Total U.S. exports to Indonesia in 1971 reached $263 million, about $3 million less than in 1970. However, during the first half of 1972, they rose to $162 million, some 20 percent over the same period of 1971. Considering the seasonal pattern of U.S. exports to Indonesia, total direct shipments probably exceeded $300 million in 1972, a record never achieved before.

U.S. commercial exports to Indonesia have continued to advance at a faster rate than total U.S. exports there. Of the $263 million achieved in 1971, exports under U.S. assistance programs amounted to $139 million, a sizable drop in comparison with 1970 when they reached $183 million. On the other hand, commercial exports soared by 50 percent, reaching $124 million in 1971 compared with $82 million in 1970.

Thus the share of commercial exports in relation to total exports has continued to grow. This is a most encouraging sign. It should be noted that this rate of increase exceeds that of total imports of Indonesia. This clearly indicates that American companies can improve further their export sales position in Indonesia if they exert more effort in this potentially very large market for U.S. goods.

The progress of U.S. exports of machinery and equipment to Indonesia has continued. They amounted to $43 million in 1968, $55 million in 1969, $93 million in 1970, and $117 million in 1971—an increase of 25 percent between 1970 and 1971 despite the inhibiting effects of dock strikes.

Besides direct shipments from the United States to Indonesia, a variety of American goods enter through Singapore, Hong Kong and other areas of the Far East where American companies keep sizable stocks for regional distribution.

U.S. imports from Indonesia increased in 1971. They reached $207 million against $182 million in 1970—a rise of 14 percent.

U.S. imports from Indonesia also increased appreciably in the first half of 1972. They rose by over 22 percent, from $102.2 million to $125.5 million. However, this rise was mostly due to an increase in oil shipments of 88 percent ($57.5 million against $30.8 million) and rubber, which jumped by 25 percent ($26.8 million against $21.6 million).

The most distinct drop in Indonesia's exports to the United States was coffee, which fell by half between the first six months of 1971 and the same period of 1972 ($24.1 million and $12.3 million). Tin shipments dropped by two thirds from $3.1 million to less than $1 million. Other items were about the same.

Recently released Bureau of the Census figures confirm the rapid growth in U.S.-Indonesian trade. U.S. exports (including re-exports) totalled $307.6 million in 1972, 17 percent more than in 1971, while U.S. imports from Indonesia totalled $277.8 million, 34 percent more than in 1971.

The economy of Indonesia has continued to make steady progress and is moving into a rising rate of industrial development. The first Five-Year Plan concentrated on agriculture and ancillary activities. The second Five-Year Plan, scheduled to start in 1974, will have industrialization as a main target; it calls for total five-year expenditures of about $2,500 million. Thus the growing need for imports, particularly capital goods, which the United States is in a favorable position to supply offers additional opportunities to American exporters.

U.S. goods are competitive

American products generally enjoy an excellent reputation in Indonesia. The sizable increase in U.S. exports in the last few years ($42 million in 1967 to $263 million in 1971) indicates U.S. goods are competitive. The monetary realignments of December 1971, which favored the dollar and caused an appreciable increase in the value of the yen and the German mark, will make U.S. goods even more competitive. In several cases they can be sold at lower prices than those of Japan and Germany, main U.S. competitors in this market, while maintaining the usual profit margin. Harary believes American exporters should take advantage of this situation.

The United States has a substantial foreign assistance program in Indonesia. In 1971, about $98 million worth of agricultural commodities under PL-480 and about $41 million in manufactured goods under project and program loans were exported to Indonesia. U.S. program and project aid should remain close to present levels this

year. Multilateral agency aid is expected to increase.

Under the current U.S. soft loan of $45 million, which is expected to be supplemented after the funds have been used up, imports into Indonesia of a wide range of products, mostly from the United States, are encouraged. Both the Indonesian importer and the American exporter benefit from this program.

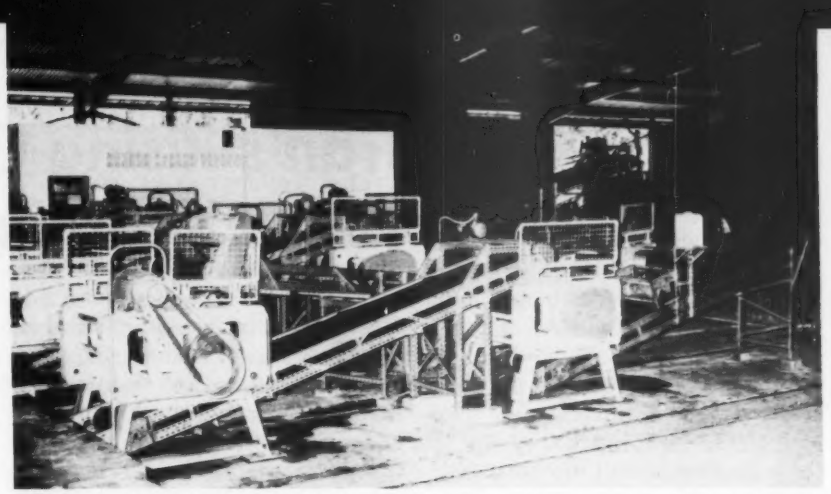
Instead of paying cash for the transaction, the importer can delay for three months the payment, which previously had to be made before opening the letter of credit. This is done against a nominal charge of ⅛ of one percent. Besides this facility, the importer also benefits from a built-in discount of about 15 percent, since his net payment is calculated at Rp. 378 to the dollar instead of the regular rate of Rp. 415 to the dollar. On the other hand, the American supplier is paid within a matter of days by AID after his shipping documents are ready.

Private foreign investment in Indonesia, which started in 1967, has continued to make favorable progress. To the end of September 1972, 494 non-oil projects calling for planned capitalization of $1,806 million had been approved by the Government.

Of these, 73 were those of American companies, with total capitalization of about $423 million. The United States is the largest foreign investor in Indonesia.

In addition, 44 oil exploration contracts with foreign companies had been signed by the end of September, calling for minimum exploration expenditures exceeding $510 million. As a matter of fact, the actual expenditures of foreign oil companies are far higher.

About 70-80 percent of the oil industry investment there is American. Besides the national oil company, PERTAMINA, five American companies are in production in Indonesia, with over 90 percent of the current output of about 1.3 million barrels a day. Some additional commercial finds have also been recently reported.



VIRGINIA INDONESIAN RUBBER CO.—*This rubber plant in North Sumatra is owned by Virginia International Co., Staunton, Va. and an Indonesian firm.*

Indonesian oil production reached an estimated 1.4 million barrels a day by the end of 1972. Oil shipments accounted for about 55 percent of Indonesia's export earnings, up from 40 percent in 1971.

Big equipment user

The oil sector is an important user of American equipment. As a matter of fact, the sizable increase in U.S. exports of pumps and centrifuges is mainly due to that activity.

Hundreds of millions of dollars will be spent in Indonesia's oil sector in the next few years. Major LNG projects and pending minerals exploration agreements may greatly augment present expenditure plans in both the petroleum and minerals sectors.

It is useful to note the phenomenal growth of domestic investment, which has exceeded that of foreign investment in the last two years. From November 1968 to August 1972, 1,133 domestic investment projects were approved. They involve planned capitalization of $1,390 million, of which $761.5 million is for imports, mostly machinery and equipment.

All these foreign and domestic investments offer additional opportunities for U.S. exports.

American companies considering the market for the first time should be aware that selling in Indonesia is somewhat more difficult than in other countries. Notwithstanding the progress in the last five years, sources for readily usable information are still inadequate. Time is required to make contacts with a variety of sources. Thus, in order for a business visitor to secure results, he must plan to spend at least several days in Jakarta, the country's import center, and allow additional time if he plans to visit other Indonesian cities.

Selling to Indonesia presents a challenge because both opportunities and problems exist. Special effort is required to consider the financing requirements of Indonesian buyers and to counter the effective competitive challenge of non-American companies which offer favorable terms on sales to Indonesia.

Indonesia Aid Group Sees Economic Gains

The Intergovernmental Group on Indonesia (IGGI) which met in Amsterdam in December to consider recent economic developments in Indonesia and to assess foreign assistance requirements felt that Indonesia's request for $760 million of external assistance for the fiscal year 1973-74 represented a realistic assessment of its requirements.

The IGGI consists of 12 donor countries and two major interna-

tional financing organizations.

The request included $210 million in nonfood program aid, $160 million in food aid—a preliminary estimate—and $390 million in project aid. This compares with an Indonesian request of $670 million in 1972-73 and actual pledges of about $724 million.

While this was not a pledging session, some members were able to indicate the probable extent of their assistance and the total will probably exceed the $760 million sought.

The International Development Association and the Asian Development Bank will provide about $150 million. The United States will probably extend non-food aid of $150 million (one third of the $450 million bilateral non-food aid requirement) plus a "fair share" of the food aid.

Substantial progress

The Group concluded that the Indonesian economy as a whole continued to achieve substantial progress. While the serious drought this year set back progress in agriculture, this was seen as a temporary check in a generally upward trend. Significant production gains were made in oil, manufacturing and forestry. The implementation rate of both foreign and domestic investments had accelerated and production capacity grown. Prospects for further development are good.

The Indonesian Delegation discussed the status of the second five-year development plan to begin in April 1974 and indicated that the basic strategy would continue to place emphasis on agriculture and on increasing rural income and employment. Special efforts would be made however, to assist in the development of local manufacturing enterprises operating on a labor-intensive basis. Attention would be given also to family planning, reducing the imbalance in income between different regions, and long-term improvement of the administrative machinery.

Iran's Rising Oil Income Helps Keep Imports High

Growing oil revenues and a continuing ability to attract external resources are underwriting rapidly rising levels of imports and investment and a remarkable rate of economic progress in Iran.

Iran's real GNP is currently growing by about 13 percent annually; heavy private and public investment outlays, liberal monetary and credit policies, and increased foreign exchange earnings seem to ensure continuation of this impressive rate of development throughout the remainder of the current Iranian year — 1351 (March 21, 1972-March 20, 1973).

Oil developments continue to play a dominant role in economic performance, the U.S. Embassy in Tehran goes on. Petroleum production grew by 8 percent during the first three quarters of 1972, and completion of a sea-island doubling export capacity at Kharg is expected to lead to a far more rapid growth of crude exports. Iran's oil income in year 1351 is now projected at about $2.7 billion, a $600 million increase over the previous Iranian year.

Possible new plants

Agreement has been reached between the National Iranian Oil Consortium (NIOC) and International Systems and Control Corp. (ISC) of Houston for a joint liquefied natural gas (LNG) project near Bushehr, in which ISC and Japanese and Norwegian interests will participate. Plants are also under consideration for other LNG facilities which would utilize associated gas from the Consortium and exploit a major gas field at Qeshm Island. Realization of these projects would enhance Iran's resource base and measurably increase foreign exchange earnings.

Other hydro-carbon transactions of note include agreement with the USSR for Phase II of the IGAT pipeline and joint Iranian-Soviet investigation of the Sarakhs gas field north of Meshed.

Industrial output during the first half of 1351 increased impressively. Sharp gains were registered in petro-chemical, electrical equipment and basic metals production, and manufacturers of consumer durables and construction materials also enjoyed a brisk business. Industrial wages and salaries climbed sharply as did fixed capital investments in glass, textiles and cement facilities.

The Government, meanwhile, is moving ahead with plans for expanding the Soviet-built Isfahan steel plant, erection of a direct reduction steel mill, and other publicly owned basic industry.

Mineral production during the first half of 1351 surged ahead; mineral exports also grew substantially. An Iranian Government entity, the Sar Cheshmeh Copper Co., has been established to exploit the Sar Cheshmeh copper deposits, and has concluded a technical services agreement with the Anaconda Copper Co. Other foreign mining interests have been actively evaluating other copper deposits in southern Iran, and the Plan Organization is expected to initiate a major survey of mineral resources in Sistan and Baluchistan and part of Khorosan.

More mineral activity

Moves are also under way to modernize the chrome and chromite industry, locate new sources of high grade coal, and develop means of recovering phosphates and mineral salts from desert areas. Enunciation of a national minerals policy could stimulate substantial foreign investment interest in this sector.

Heavy public sector investment

in infrastructure, readily available credit, and a favorable economic outlook have combined to sustain boom conditions in the construction industry. Construction starts were at or near record levels in spite of escalating costs and some building material shortages. The government's interest in promoting housing and rural development programs and massive Fifth Plan investment outlays are expected to guarantee contractors a high level of activity in the coming year. Government action to curb speculation and rising building costs might also be anticipated.

Iran's service sector has also expanded swiftly and now accounts for about two-fifths of GNP. Rising outlays for public services, a substantial enlargement of the banking and insurance industry, and development of new transportation and communication facilities are responsible for most of this growth, which should continue during 1973.

Agricultural production in 1351 has been satisfactory but not as large as earlier forecasts had indicated. Farm output is now estimated to be about 3 percent above normal levels of production, a rate of increase well below that registered elsewhere in the economy.

Growing government role

The rapid growth of the economy in recent years has been sustained by significant expansion of the public sector. The Government's budget in the current Iranian year will total $5.9 billion, equal to about 40 percent of Iran's 1351 GNP at current prices.

Rapidly increasing oil revenues and prospective LNG and copper earnings have materially enhanced Iran's credit standing and assured ready access to the U.S., Eurodollar, and Japanese money markets.

Foreign exchange revenues rose during the first half of 1351 to almost $1.6 billion and increased oil production and expanded non-oil exports may swell total 1351 earnings to as much as $3.4 billion.

Imports of goods and services climbed by 17 percent in the first six months of 1351, and a far sharper rate of increase seems likely over the next four to five months. Gross foreign exchange holdings increased by about $175 million in the second and third quarters of 1972, and at about $830 million, foreign exchange reserves totalled substantially more than short-term liabilities.

Retail and wholesale price levels have continued to climb as increased government spending, shortfalls in domestic supply, the high cost of imported factors of production, and rising levels of liquidity have contributed to escalating prices. The Government appears determined to stabilize the prices of basic food stuffs, but without some tightening of monetary policy it seems doubtful that inflation can be reduced much below the 7-8 percent annual increase registered since early 1350. Newly announced credit restrictions should dampen pressures on prices but a significant decline in the present rate of inflation before mid-1973 appears unlikely.

Political stability and an ambitious and successful development effort combine to make Iran the most attractive and promising market for U.S. producers and investors in the Middle East.

Iran's imports for the year ending March 21 are expected to total about $2.9 billion and foreign firms and financial institutions are intensifying efforts to exploit this large and growing market. American business has been actively participating in this process, and efforts to establish new dealerships and enlarge and reinforce existing trade relationships have met with substantial success.

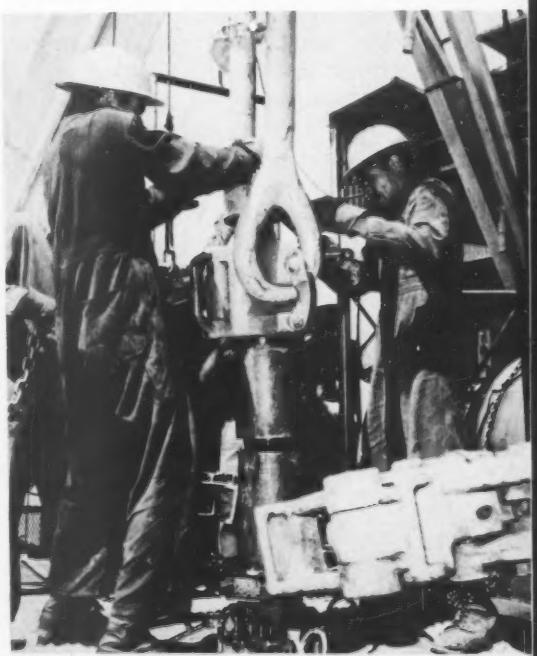
American firms selling to Iran continue to face keen competition from both Western European and Japanese business. Foreign companies generally offer attractive financial and servicing facilities, and U.S. businessmen should give careful consideration to these aspects of their sales effort.

The Export-Import Bank can provide essential pre-commitments on financing, assist in covering the cost of engineering and feasibility studies, and make credit available through local banks to small and medium-size buyers of U.S. equipment and related services.

Some advice to sellers

An intimate knowledge of local conditions is an essential ingredient of commercial success on the Iranian scene, and the importance of an aggressive and competent local representative cannot be overstated.

Iranians are experienced comparative shoppers and such considerations as advanced technology, product reputation and quality, and well established post-sale support facilities permit many U.S. companies to overcome the apparent price advantage of a foreign competitor. The December 1971 changes in currency parities —the devaluation of the dollar and Iran's decision to maintain the rial on a parity with the U.S. dollar—



IRANIAN OIL CREW—*Growing revenues from oil are keeping Iran's economy moving at a fast pace and boosting demand for a wide range of imports.*

have enhanced the sales potential of American products in Iran and resulted in a rising level of U.S. exports to the area.

At over $284 million, mid-1972 U.S. exports to Iran were a sizable 40 percent above sales registered during the first half of the previous year. Sharply rising exports of machinery and manufactures, growing purchases of agricultural commodities, and an improved market for transport equipment seemed to assure U.S. sales to Iran of over $600 million during 1972 and a market share of about 21 percent.

Best export prospects

Recently conducted trade promotion activities have revealed substantial Iranian interest in food processing and water purification equipment, and as in the recent past, American suppliers of agricultural implements; refrigeration, air-conditioning, and heating equipment; office machines; communications and electronics equipment and facilities; scientific, medical, hospital, and laboratory supplies; electrical power generating, construction, mining and textile machinery; metal manufactures and pipe; and automotive and aircraft parts, servicing equipment, and fittings appear to have the best prospects for sales to the Iranian market.

Expanded activity in petroleum, metals, mining, communications, and agriculture also seem to offer new opportunities for U.S. business.

Government imports will exceed those of the private sector by over $200 million in the current Iranian year, and this trend will probably be accentuated during the Fifth Plan period as massive government outlays for basic infrastructure, irrigation, power generation and the petro-chemical industry generate growing public sector procurement. Distribution equipment for a gas pipeline from Sarakhs to Meshed, a new international airport for Tehran, construction of new port facilities at Bandar Abbas, Bandar Shahpur and Bushehr and a $200 million dam project in the Lar Valley are only some of the more significant trade opportunities which are currently being offered to qualified and well-represented foreign firms in Iran.

Business with official Iranian agencies requires considerable time and carefully selected and developed commercial representation, but the extent and growth potential of this market appears to merit the necessary cost and attention.

Key Iranian leaders appreciate their country's need for technology and foreign expertise and have been generally pragmatic in their approach to the foreign investor. Investment during the Fifth Development Plan period will reportedly total about $30 billion with emphasis on infrastructure, mining and agriculture.

Achievement of these investment goals will depend in no small measure upon the response of private foreign enterprise, especially in such critical areas as hydrocarbons, agriculture and mining.

Investment incentives

About $4 billion is to be allocated for the agricultural sector alone and new agro-business ventures will be offered a ten-year tax holiday, total import duty exemption for farm machinery and equipment, and access to sizable loans from the government. Industrial projects outside the Tehran area are to benefit from some of the same incentives offered for agro-business ventures.

U.S. investors are demonstrating increased interest in Iran as is shown by a growing volume of investment guaranty applications, which now total in excess of $66 million.

Argentines Await New Government, See Signs Of Economic Recovery

The worst of Argentina's slump may have passed, and many observers expect 1973 to be a good year for the economy. This would be good news for the new government that is scheduled to be elected in March and take office in May, after seven years of military rule.

The Argentine economy continued a reasonable rate of growth through the first nine months of 1972. GDP grew at 4.0 percent above the corresponding months of 1971. Industrial activity contributed to a continued positive rate of growth despite a poor agricultural year.

With the economy growing relatively slowly, unemployment appears to be increasing gradually—currently, it is estimated at 7.5 percent—and remains a matter of general national concern.

The private sector's temporary shelving of expansion plans has placed a strong restraint upon investment expenditure. Uncertainties concerning the political changes served to dampen interest in new projects. Government investment, particularly in public works construction, dominated new investment expenditures.

An additional factor behind the slow movement of private investment has been a deteriorating financial situation reflected in the continuation of a balance of payments deficit. The deficit in 1971 was $563 million; for 1972 the deficit was approximately $300 million.

Economic measures

The balance of payments problem has resulted in official measures taken to restrain capital outflows and to limit imports. Remissions of profits, royalties and dividends are possible only through the purchase of government dollar-denominated bonds. Various regulations restraining imports have

included a requirement for foreign financing to be obtained by the Argentine buyer. For capital goods, this requirement is scheduled according to the value of the import. Most other imports must obtain a minimum of 180-day financing.

Export foreign exchange earnings were higher than anticipated earlier in 1972 and provided a marked improvement in the trade balance, which may have been positive by $50 million to $90 million for 1972. Export expectations for beef and other products have improved sharply. Both excellent weather conditions for grains and a firm international market for these products indicate a greatly improved return from sales in the first half of 1973.

Inflation is a problem

Inflation, as measured by a cost of living index for Buenos Aires, is running at an annual rate of about 65 percent. The increase in the official wholesale price index for the year ending Oct. 31 was 84 percent. Inflation, therefore, continues to be a disrupting factor for business planning. Monetary and fiscal policy-makers sought during 1972 to maintain gross output while reducing the availability of money for speculative purposes.

Some slowing in the rate of inflation is anticipated in early 1973 as the result of monetary and fiscal policy applied during 1972, absence of rapid and large devaluations and, hopefully, moderate wage increases. A non-inflationary fiscal policy will be more attainable if there is marked improvement, as expected, in the balance of payments.

For the past two years, the Argentine Government has applied a series of increasingly restrictive import controls as a principal tool to try to improve the balance of payments situation. These restrictions appear to be affecting Argentine imports from the United States to a greater degree than imports from other countries. Market share figures show that for the first five months of 1972, the U.S. share of the Argentine market was 19.2 percent compared with 25 percent for the same period of 1971 and 22.2 percent for the full year 1971.

The import restrictions appear to be accomplishing the desired effect, that is, to cut the balance of trade deficit. For the first 9 months of 1972 the trade deficit was only $24 million compared to $163 million for the same period of last year. For the full year 1972, exports closely approached the official estimate of $1,900 million while imports were probably slightly less. The favorable outlook for agricultural exports has led some Argentine government officials to make a preliminary estimate of $2.4 billion of exports for 1973.

With good luck and reasonable policies (mostly, avoiding disincentives to agricultural exporters) this estimate could be attained. The Government hopes to keep imports at about last year's figure and attain a balance of payments surplus on the strength of the trade surplus. Thus it is likely that the Argentine market for imported products will not diminish and could increase — a distinct possibility, even with the current import restrictions.

Import restrictions

Restrictive measures put into effect in October consist of four lists of products, each subject to different regulations. The first list consists of "essential" raw materials and supplies. To import these, the only requirement is a sworn declaration of how much the importer will need over a period of several months; approval is said to be automatic. The second list is largely intermediate goods, capital equipment and spare parts, not produced in Argentina; these require individual advance approval from the Commerce Ministry. The third list consists of product imports which are suspended for 90 days pending a decision on whether each is "essential" or is produced in Argentina. The fourth list is "non-essential" goods or those produced in Argentina. Imports of these products were suspended for 6 months, and it is doubtful if the suspension will be lifted at the end of that period of time.

About 95 percent of Argentina's imports are on the first two lists of products.

As with most complicated systems of controls, this one puts a great deal of discretionary authority into the hands of a few civil servants whose decisions are matters of life and death for many businesses. The system puts a large premium on having an active and influential agent in Buenos Aires who can secure favorable interpretations of the regulations.

There will be pressure

There will be considerable pressure this year to relax the import curbs. Many companies will be running low on stockpiles. Others who have postponed large expenditures on replacing obsolescent equipment will feel a greater need to do so. A lower rate of inflation and a reduced rate of peso devaluation should make it easier to pay off existing foreign debt and leave many companies in better financial shape to buy more imported equipment. The likelihood of the actual relaxation of import controls depends on how well the government will feel it is achieving its balance-of-payments goals.

Most major economic decisions in the private sector are being postponed pending the March elections. Although it is not clear what political party or coalition may win the elections, there are a number of points of basic agreement among the platforms of the parties most likely to come to power. If policies based on these platforms were put into effect, we could expect to see monetary and fiscal policy subordinated to other economic and social objectives. There would likely be increasing government intervention in the economy. Changes in income distribution would probably get more attention than incentives

for income generation. Trade would continue to be subject to rigid restrictions.

It could be expected that domestically-owned business enterprises and banks would be increasingly favored over foreign-owned ones. The latter point is of particular importance both for U.S. exporters and investors interested in opportunities in Argentina.

The trend seems clear

It seems clear that the trend is towards effective prohibition of imports of products which are manufactured in Argentina, and perhaps even products which "could be" manufactured there given sufficient incentive, such as import prohibition. Foreign-owned enterprises in Argentina already suffer discriminatory treatment in comparison with Argentine-owned firms, for example in reduced access to bank credit.

During the next 6 or 8 months, at least, investment by government agencies and enterprises will continue to far outweigh those by private enterprise. Recent rate increases (plus further increases expected early in 1973) hopefully will allow government enterprises, such as the railways, electric energy entities, gas, water and sewage entities and others to continue with fairly ambitious investment programs.

Much of this investment will involve imports of equipment and services. For example, studies for the $600 million Salto Grande hydroelectric project are moving along well. This project will probably be financed partially by a loan from the IDB. As another example, the railway improvement program (with U.S. locomotives) is going ahead on schedule.

Where big money goes

Nine-month figures on gross fixed investment show in broad terms where the big money is being spent. Public construction was up by 21 percent over the same period of 1971, although private construction was down by 8 percent. In producer equipment, transportation equipment was up by 18 percent, while other machinery and equipment increased by 5 percent.

Investment in inventory showed practically no increase in the third quarter. This tends to indicate that stockpiling has come to an end. Import restrictions may force many Argentine industries to live off their stockpiles. The fact that the peso has risen against the dollar since late September also decreases the tendency to import for stockpiling.

In September, a $100 million Cooperative Financing Facility from the Export-Import Bank was accepted by the Central Bank of Argentina. The Central Bank has not yet started drawing on this credit. It has announced that this facility will be used principally, if not entirely, to finance public sector imports. Imports under this facility should begin to move early in 1973.

In May 1972 a U.S. Department of Commerce Regional Trade Center was opened in Buenos Aires. Its success in promoting sales of U.S. equipment has surpassed all expectations, especially considering the slower growth of the economy as compared with two or three years ago. In its first 6 months, the center held four major multi-exhibitor shows in high-technology fields such as quality control equipment, advanced business machines, analytical instruments and process-control instruments. In addition there were ten between-show promotions of products of individual firms.

The Center's activities so far have resulted in sales amounting to some $13 million. Most of these sales are expected to lead to further sales of the same or related equipment as the new technology takes hold.

The Center is now beginning to hold exhibits in major cities in the interior of Argentina. The first of these, at Córdoba and Rosario, were very successful.

Promotions are planned

For the coming year, promotions are planned for the following product lines: data communications equipment, packaging equipment, printing and graphic arts equipment and nuclear instruments.

The Argentine Government has announced that it is counting on more foreign private investment in 1973. Indeed, some foreign companies (including U.S.) are planning to invest in specific, well-sheltered projects such as the Bahía Blanca petrochemical complex. The U.S.-owned automobile companies are investing in equipment to produce new models.

However, recent legislation is not likely to encourage new foreign private investment. For example, the recent Industrial Promotion Law provides benefits and incentives for new industrial investment by "local firms of domestic capital" but, except in a few instances, denies them to foreign-owned firms.

PATAGONIA PIPELINE — *Argentine workers weld sections of 30-inch pipe that will transport natural gas through the remote Patagonia region of Argentina's southernmost state of Santa Cruz. Bechtel Inc., San Francisco, is helping in construction of the 700-kilometer long pipeline, set for completion in May.*

New Zealand's New Government Inherits Economy On The Way Up

New Zealand's new Labour Government has inherited an economy with the brightest prospects in a decade.

Soaring wool prices continue to support large balance of payments surpluses, foreign exchange reserves are at record levels, and the external position should remain sound despite a drop in dairy export receipts when Britain enters the EEC.

According to the U.S. Embassy in Wellington the domestic economy is on its way to recovery from stagflation. Rates of price increase continue to decline, but a new outbreak of inflation is a present danger, which may severely test the price-wage policies of the Government.

While the business revival is still somewhat hesitant, retail trade and private housing construction are forging ahead, and a recovery in investment spending looks imminent. Ample capital is available.

Manufacturers' confidence, shaken by the previous government's policy of removing import licensing controls, has been bolstered by the November election victory of the Labour Party (pledged to continue licensing) and the stock market has moved up strongly.

Major changes unlikely

The new Government is moderate and unlikely to make major changes in economic policy affecting the United States. Prospects for U.S. exports and investment are very good.

The upturn in the domestic economy should stimulate a rise in imports, while lower returns from the dairy sector should cut into export receipts somewhat.

According to Reserve Bank statistics for the year ended September 1972, New Zealand's exports to the United States were down 1.6 percent from the previous year. Imports from the United States increased 19.3 percent.

The insignificant decline in New Zealand's exports to the United States reflects the effect of abnormally high beef shipments in the last quarter of 1970. The United States easily retained its position as New Zealand's second best customer, taking 16.6 percent of total exports.

The more marked increase in imports from the United States likewise reflected a special factor, the cessation of the U.S. dock strikes, which had impeded shipments in the previous period. The U.S. share of the New Zealand market increased to a normal 12.2 percent, third biggest after Britain (39.9 percent) and Australia (23.6 percent). Japan was fourth with 9.7 percent.

In accordance with a rough five-year timetable, the National Party Government had been slowly dismantling the licensing restrictions which still control about 30 percent of New Zealand's imports and replacing them with tariffs as the main means of protection for New Zealand industry. The Labour Party—which originally imposed blanket import licensing in the 1930s and reimposed it in 1957-59—gave every indication during the 1972 campaign that if elected it would halt the removal of licensing. The new Labour Government has not disclosed its exact policy, but it is certain to move more cautiously than did the National Government in dismantling import controls. In view of the country's strong balance of payments position any large-scale reimposition of controls is highly unlikely.

While import licensing is no longer a serious obstacle to imports of most manufactured goods of major interest to the United States, it would clearly be helpful to U.S. sales in the long run if the Government were to decide to continue the liberalization process. In the short run, however, the new government's more protectionist policy may restore the confidence of manufacturers—which had been shaken by the movement toward import liberalization—and stimulate new investment, leading to imports of U.S. machinery and equipment.

Studies are well under way for a major overhaul of New Zealand's tariff structure, involving the gradual removal of the tariff preferences enjoyed by Great Britain. This is a natural result of Britain's EEC entry, and will presumably be carried through by the Labour Government. While other Commonwealth countries will retain preferential status, the net effect of the new tariffs should be beneficial to U.S. exports.

Investment still welcome

Past New Zealand policy has welcomed foreign investment, preferably with New Zealand participation, in projects of benefit to the New Zealand economy. Despite the somewhat protectionist tone of the Labour Party's election manifesto, this will remain basic policy of the Government.

A Monopolies Commission will probably be established to oversee foreign capital operations (now a function of the Reserve Bank). The change could mean more thorough scrutiny of investment proposals, but not necessarily a higher rejection rate.

On the whole—barring a renewed outbreak of serious inflation—the New Zealand economy seems ready to enter upon a period of sustained and vigorous growth. This will be encouraged by the new Government, which has indicated that it will place special stress on goals of industrial and regional development. New and promising opportunities are thus sure to arise for American exports and investment.

World Trade Actions

Philippines Restructures Tariff And Customs Code

Philippines: The Tariff and Customs Code of 1937 was completely revised by President Marcos in Presidential Decree No. 34, issued Oct. 27. Significant changes produced by this action were: 1) the adoption of the Brussels Tariff Nomenclature (B.T.N.) system of trade classification; 2) the reduction of the number of individual tariff rates from 43 an 6 (ranging from 10 percent to 110 percent); 3) the introduction of the uniform revenue rate of 10 percent; and 4) the change in the basis of valuation from c.i.f. to f.o.b.

In addition to the above, Presidential powers to alter tariff rates are greatly enhanced. Already empowered to raise tariff rates (by not more than 10 percent), the President may now establish import quotas, revise protective duties and enter into trade agreements with other countries. Duty changes must first be recommended by the National Economic Development Agency; the President, however, will chair the NEDA.

Additional information regarding these changes is available from the Far East Division, BIC-238, U.S. Department of Commerce, Washington, D.C., 20230.

Brazil: The Government has announced new restrictions on foreign technical service companies operating in Brazil.

Resolution 209 stipulates that foreign technical service companies in the fields of engineering, architecture, and agriculture may only work in Brazil if they form consortia with Brazilian firms. With Decree 64,345 of April 10, 1969 already restricting government technical service contracts to technical service companies with at least 51 percent Brazilian ownership and technical staff, the Resolution will mainly affect contracts in the private sector.

Trade sources do not foresee major difficulties with the Resolution for the foreign technical service companies already established in Brazil, most of which have formed local joint venture companies satisfying the requirements of Decree 64,345. They believe, however, that the Resolution may affect adversely those foreign technical service companies not established in Brazil and wishing to bid for Brazilian contracts. These companies may find it difficult to form consortiums with Brazilian companies and to satisfy the Resolution's registration requirements.

For further information write BIC-242, U.S. Department of Commerce, Washington, D.C., 20230 (phone 202-967-5427).

Canada: The Minister of Finance has directed the Canadian Tariff Board to make a study of the provisions of the Customs Tariff regarding glass fibers, filaments and related products. This directive was prompted by representations that the tariffs on these products have had an inhibiting effect on the development of industries using these materials, particularly the fiber reinforced plastics industry.

Others claim that the existing tariff protection is needed.

The Canadian tariff items to be reviewed are: 56005-1, 56010-1, 56015-1, 56105-1, 56110-1, 56117-1, 56300-1.

The Board may also include such other tariff items which it feels are relevant.

Briefs or submissions containing relevant facts, opinions and arguments concerning the industry under study, including proposals concerning the rates of duty and wording of the pertinent tariff items or any newly proposed tariff items should be filed in writing with the Secretary of The Tariff Board, Ottawa, Ontario K1A OG7 Canada not later than March 20. There should be 125 copies of briefs or submissions filed.

Persons proposing to attend the public sitting should so inform the Secretary not later than May 18. Those interested in this announcement may request the Secretary to place their names on the special mailing list for Reference 151.

Portugal: Decree law No. 282, published Dec. 5, establishes regulations for the construction and operation of nuclear power plants. This decree supplements nuclear energy regulations passed in 1969. The new law requires three separate but sequential government approvals for setting up nuclear power plants: 1) a preliminary license, 2) approval for construction and 3) approval for production of power. In each case, the application is first presented to the Directorate-General for Electrical Services in the Ministry of Economy; then it must be approved by the Nuclear Energy Board and by the Nuclear Power and Fuel Commission.

Zambia: Due to the current unrest on the Zambia-Rhodesia border, the latter government has closed all exit-entry points between the two nations. The border closure severely limits the shipment into Zambia of materials consigned to the port at Beira, Mozambique, and South African ports, since goods from these ports must transit Rhodesia.

U.S. firms exporting to Zambia via Rhodesia should adjust their freight forwarding instructions to take advantage of alternate routes through Angola, Tanzania, Zaire or Kenya.

International Business Reports

World Business Systems and Environments. By J. Boddewyn et al. Intext Educational Publishers, New York. 513pp. $13.50.

Discussess significant environmental factors of the business systems of five major economic regions: Asia, Latin America, Middle East, Sub-Saharan Africa and Western Europe. The main problems and trends in today's business world are discussed after an introductory chapter presents a conceptual framework for the analysis of business systems and their interaction with the environment.

The book attempts to examine the total business system of each area—management, marketing, finance, industrial relations and production—and analyzes it in reference to all phases of the environment — economic, political, social, cultural, historical and physical.

Write: Box 30, INTEXT/ CHANDLER, 257 Park Ave. South, New York, N.Y., 10010.

The U.S. Tariff Commission issued in January 1972 a volume containing the legal text of the Tariff Schedules of the United States, together with annotations prescribing statistical information to be supplied on customs forms. "Tariff Schedules of the United States Annotated (1972)" TSUSA-1972 sets forth the changes brought about by the Kennedy Round trade negotiations and includes all other amendments and modifications made on or after Aug. 31, 1963.

This publication is on sale by the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402, for $19.50 ($5 additional for foreign mailing), which includes the basic (1972) document and all supplements until another basic document is published. Subscribers prior to January 1 will continue to receive all supplements to the 1972 edition (subscription price of $11 plus $2.75 for foreign mailing) at no additional cost until a new basic document is published.

International Publications: An Annotated Subject Bibliography — 1972-73 (1st) Edition. International Publications Service, New York. 103pp. $5.

Compiled by professional librarians, this bibliography contains more than 5,500 titles, mostly in English, selected from worldwide sources. Among other topics, it includes sections on business and economics, general and statistical year books, publications of leading international organizations, banking and investment, taxation, development, computers and data processing, management and marketing, commerce and industry, and science and technology.

Write: International Publications Service, 114 East 32nd St., New York, N.Y., 10016.

Canada in a Wider Economic Community. Sponsored by the Private Planning Association of Canada and published by the University of Toronto Press. 151pp. $4.

This is the 13th and final volume in the "Canada in the Atlantic Economy" series, a program of economic studies initiated in 1965 to study the implications for Canada of freer trade among the nations bordering the North Atlantic. This last volume summarizes and analyzes the results of previous studies in the program and provides new research contributions.

Write: Private Planning Association of Canada, 2060 Sun Life Bldg., Montreal 110, Quebec, Canada.

The Middle East: A Selected Bibliography of Recent Works, 1970-72. By Harry N. Howard. Middle East Institute, Washington, D.C. 75¢.

This supplement updates the previously issued *Bibliography* covering the years 1960-69. **Write:** The Middle East Institute, 1761 N St., N.W., Washington, D.C., 20036.

Calendar For World Traders

Feb. 6 — Atlanta — National Maritime Council Forum (3 p.m.) & Unity Dinner (6:30 p.m.), Marriott Motor Hotel.

Feb. 6—Chicago—Automotive Exporters Club, Builders Bldg.

Feb. 6—New York—FCIB Luncheon & Roundtable Conference, Summit Hotel, noon.

Feb. 6-7 — New York — 13th Containerization Conference, Americana Hotel. Sponsor: Containerization Institute.

Feb. 8 — Chicago — International Trade Club meeting, Sheraton-Chicago.

Feb. 13 — New York — International Executives Assn. luncheon, Summit Hotel, noon. Subject: Trade opportunities in the Dominican Republic.

Feb. 14—Seattle—Export seminar, Public Library Auditorium, 9:30-noon. Sponsors: Commerce Field Office and Small Business Admin.

Feb. 21 — Chicago — Chicago Midwest Credit Management Assn. meeting, Bismarck Hotel.

March 1 — Milwaukee — Milwaukee World Trade Club monthly meeting, Ramada Sands Motel.

March 7-8 — Chicago — 36th Mid-America World Trade Conf., Sheraton-Chicago Hotel.

March 29—Cleveland—29th annual Cleveland World Trade Conference, Statler-Hilton Hotel.

Worldwide Business Services

International trade specialists in the Department of Commerce and Foreign Service Officers in the U.S. Embassies and Consulates around the world are continually developing specific commercial opportunities through which American companies can find buyers, agents, partners or investors overseas. One of the major means for communicating these opportunities promptly and accurately to the U.S. business community is through the columns of this magazine.

The section that follows presents details about U.S.-sponsored overseas exhibits, licensing and joint venture proposals, opportunities to sell to foreign firms and government agencies and appoint agents, details on major construction and expansion projects, and notices of U.S. visits by foreign buyers.

U.S. Promotions Overseas

Industrial Process Control-Analytical Instrumentation. Sydney Trade Center. March 5-9. Prospects for sale of U.S. process control equipment and related instrumentation are especially bright in Australia. Demand continues to be spurred by strong growth in the mineral processing, chemicals, electrical power and natural gas industries. Call J. Klingelhut, 202-967-3363.

Metal Parts Production Equipment. U.S. Trade Center, Stockholm. March 5-9. Metalworking is Sweden's largest industry. In 1969, its output exceeded $6 billion, constituting more than one third of all industrial production. Call C. E. Walls, 202-967-4256.

Apparel Manufacturing Equipment. Milan Trade Center. March 12-16. A steadily expanding market, combined with an improving rate of exchange between the dollar and lira, provides American firms with a unique opportunity for sales of high technology, mass production garment-making equipment. With equipment purchases averaging $40 million yearly and an expanding economy, prospects for sales in the Italian market are bright. Call Beryl Cohen, 202-967-4508.

Metallurgical Equipment and Instrumentation Trade Mission. Mexico City, Queretaro, Monterrey. April 1-14. This mission is designed to take advantage of specific project opportunities in the steel mill expansion and mining programs in Mexico as well as other attractive business possibilities. Call Joseph Muller, 202-967-4927.

Railway Equipment Trade Mission. India. April 2-14. This mission is designed to tie in with the Indian Eleventh Railway Project. A World Bank loan of $75 million (IDA Credit) has been authorized for purchase of railway equipment through worldwide tenders. The $75 million covers only part of the total foreign exchange cost of $170 million. Call Herbert Socks, 202-967-4927.

Electronics Test and Measuring Instruments. London Trade Center. April 9-13. Inflationary pressures in the United Kingdom have made cost effectiveness the principal consideration in the purchase of electrical-electronics measuring and test instruments. Call L. W. Swift, Jr., 202-967-4461.

Materials Handling Equipment. U.S. Trade Center, Stockholm. April 9-14. The Nordic markets for these products total an estimated $450 million of which imports supply one third. New programs are now planned to modernize and rationalize production, internal transportation packaging and storage operations. Call your nearest Department of Commerce Field Office.

Airport Development Trade Mission. Lebanon, Saudi Arabia, and Kuwait. May 2-14. These countries are anxious to better their airport facilities and are backed by ample hard currency revenues. U.S. industry should have a competitive edge in marketing. Call Fred Crosley, 202-967-2232.

Agricultural, Drainage and Irrigation Equipment Trade Mission. India. May 6-18. This mission seeks to capitalize on the $36 million Indian plan for development for which free foreign exchange has been allocated. It will visit Bombay, Hyderabad, New Delhi and Bangalore. Call Andre Williams, 202-967-4227.

Metalworking Machinery & Equipment Trade Mission. Spain and Italy. May 7-18. Improved economic conditions with rising consumer demand, substantial new government spending on public sector capital projects and increased private investments in new industrial plants is expected to increase the need for all types of metalworking equipment. Call David Brann, 202-967-4228.

Nor-Shipping '73. Oslo. May 9-15. The fourth international shipping exhibition offers U.S. companies an excellent opportunity to promote their products to Scandinavian users of shipbuilding, marine, cargo, and port equipment. Call A. J. Beiring, 202-967-3838.

Interpack '73. Duesseldorf. May 10-16. This is the largest specialized packaging exhibition in the world. Consumption of packaging machinery in West Germany reached $74 million in 1971, up 11.6 percent over 1970. Call W. S. Gaines, 202-967-4073.

Audio Visual Marketing and Training Aids, Sydney Trade Center. May 14-18. This show and seminar is aimed at a very promising market for imported audio-visual equipment and materials estimated at $6-7 million in 1972. Call Lee Barnes, 202-967-4678.

Analytical Instruments for Science and Industry. Tokyo Trade Center. May 14-18. Japan is a $100 million market for analytical instruments for science and industry. Consumption is expected to rise 30 percent annually over the next few years. High sales potentials exist for a broad range of instruments and equipment. Call Randy Miller, 202-967-4056.

Minicomputers and Related Peripherals Exhibition. Milan Trade Center. May 15-19. The market for U.S. minicomputers is expanding at 30-40 percent annually, and is wide open. Sales are expected to reach $10 million in 1975. Italian EDP users are moving from large systems to smaller, specialized ones. Equipment to be exhibited includes minicomputers and all EDP peripherals designed for use with minicomputers. Call Noel Negretti, 202-967-2434.

Petroleum-Petrochemical Equipment. Hungary. May 18-28. The Hungarian petroleum industry will purchase during 1973-75 an estimated $110 million worth of machinery, equipment and instrumentation for the exploration, drilling, production, refining, transportation and storage of oil and gas. The Budapest International Fair will concentrate on these products, and in addition to Hungarians is expected to attract buyers and end-users from other major Eastern European countries. Call A. Hertzberg, 202-967-2801.

Microwave Equipment and Components. Frankfurt Trade Center. May 21-25. The German market for microwave products, currently at $65 million, is projected to expand sharply in the next decade, spurred by the development of radio relay, satellite, and waveguide systems, air traffic-control networks, and by rising outlays for defense and space research. U.S. made or designed equipment and components accounts for a leading share of the market with the sales outlook especially promising for items suitable for high frequency applications. Call Bill Gaines, 202-967-4073.

Pulp, Paper and Conversion Equipment. Mexico City Trade Center. May 21-25. Rapidly expanding pulp and paper industries form attractive sales targets in a nearby market. Call Porter Clary, 202-967-5040.

Industrial Process Control Equipment. Stockholm Trade Center. May 22-24. Scandinavian industries, faced with high labor costs, are investing in equipment to increase productivity. Demand is strong for process instruments; control, regulator and selenoid valves; and related process control computer and peripheral equipment. Call your nearest Department of Commerce Field Office.

Industrial Use of Natural Gas Trade Mission. Japan & Australia. May 22-June 8. Steady increase in the availability of natural gas supplies and progressively heavy dependence on this resource by industry creates an especially good market for U.S. manufacturers of industrial equipment and systems associated with

Sales opportunities in 14 U.S. commercial exhibitions, 24 shows at the 10 U.S. Trade Centers, and 7 Trade Missions are being offered to present and potential U.S. exporters between now and December.

Each Trade Center exhibition is limited to one particular line of products and centers are located in Bangkok, Buenos Aires, London, Milan, Mexico City, Frankfurt, Stockholm, Sydney, Tokyo, and Paris. For further information on the Trade Center shows described or for more facts on U.S. exhibitions, **write:** *Overseas Operations, BIC-218, U.S. Department of Commerce, Washington, D.C. 20230.*

U.S. specialized trade missions are comprised of groups of U.S. businessmen organized by the U.S. Department of Commerce to travel abroad to promote the export of U.S. goods and services produced by their particular industry. **Write:** *Trade Missions, BIC-252, U.S. Department of Commerce, Washington, D.C. 20230.*

natural gas. The mission, limited to 8 to 10 manufacturers, will visit Tokyo, Osaka, Sydney and Melbourne; New Zealand optional. Call Julian Hammond, 202-967-2346.

Food Processing Machinery. Beirut Regional Trade Development Office. June 4-8. Lebanese packers and growers are upgrading equipment to process fruits for export. Opportunities exist for establishing representation and selling controlled atmosphere, grading and sorting equipment. Promotion limited to five firms. Call Jack Hearn, 202-967-5767.

Packaging Machinery and Equipment Exhibition. Buenos Aires Regional Trade Development Center. June 11-15. In Argentina the packaging industry is growing 7 percent per year but domestic production satisfies less than 40 percent of the country's demand for packaging machinery. The current market is about $5 million per year. Equipment featuring the latest techniques is in increasing demand, with medium-size and medium capacity machines and equipment having the best sales potential. Call Vicky Eicher, 202-967-4580.

Data Transmission Equipment and Input/Output Devices. Tokyo Trade Center. June 11-16. The anticipated opening of Nippon Telephone and Telegraph's circuits to data transmission this month is expected to stimulate new demands in Japan for data transmission equipment (and computer terminals). Sales of data transmission equipment in Japan in 1971 were estimated at $390 million, including imports from the U.S. of nearly $16 million. Call Bill Dawson, 202-967-3984.

Materials Test and Quality Control Equipment. Milan Trade Center. June 12-16. Featured will be electrical, electronic and sophisticated mechanical equipment for testing and analyzing physical properties of industrial materials and for environment simulation testing. Italy is a good market for American-made testing equipment. The show will be promoted to a wide audience of buyers in Italian industry. Contact Robert Wallace, 202-967-4508.

Modern Merchandising Equipment. Paris Trade Center. June 18-22. France has developed one of the most advanced retailing systems in Europe, second only to West Germany in the proliferation of large self-service stores. Given the continuing construction, development, and success of American-style supermarkets, shopping centers, and smaller stores, the outlook for U.S. manufacturers of modern merchandising equipment is most promising. Call Samuel Spaulding, 202-967-3968.

Combined EDP and Business Equipment, and Industrial, Scientific, Test and Measuring Instruments Exhibition. Hong Kong. June 18-23. Exports of EDP and other advanced office equipment have risen from $581 million in 1962 to more than $2 billion in 1970. U.S. exports to Hong Kong of instruments in 1971 totaled $3.6 million. For EDP and Business Equipment participation call Tom Padgett, 202-967-4727. For Industrial, Scientific, Test and Measuring Instruments participation call Irvin Lloyd, 202-967-3783.

Achema '73. Frankfurt. June 20-27. The triennial Chemical Engineering Exhibition and Congress is one of the world's most important events in this field. The U.S. Exhibition will feature industrial process instruments, control, regulator, and solenoid valves, related electronic computers, peripheral equipment, parts and accessories. Contact Don Schmadel, BIC-226.

Scientific Instrumentation. Beirut Regional Trade Development Office. June 25-29. An opportunity for up to five firms to establish representation or introduce new products in the growing Middle East market. Call John Bodson, 202-967-5767.

Air and Water Pollution Control. Mexico City Trade Center. June 25-29. Growth of the Mexican market for air and water pollution control equipment is expected to exceed 40 percent by 1974. Imports of sophisticated equipment and engineering know-how in this field are supplied principally by U.S. companies. The Trade Center exhibition coincides with the international meeting co-sponsored by the American Association for the Advancement of Science and the Mexican Government, assuring a large sophisticated audience. Call Fred Tower, 202-967-2325.

Data Transmission Equipment and Input Output Devices. Tokyo Trade Center. June 25-30. The opening of Nippon Telephone and Telegraph's circuits to data transmission on Nov. 12 is expected to stimulate new demands in Japan for data transmission equipment (and computer terminals). Sales of data transmission equipment in Japan in 1971 were estimated at $390 million, including imports from the U.S. of nearly $16 million. Call Ray Eiselt, 202-967-5622.

Power, Processing, Industrial Water Purification. Trade Mission/Seminar to Brazil and Argentina. July 8-22. Emphasis will be on equipment and planning required to supply vital energy for industrial plant uses, as both nations are embarked on manufacturing programs and development of additional power sources. Brazil's 1973 import market for power equipment components is estimated at $250 million. Argentina has a 10-year program of electrical expansion underway which may cost $2.6 billion. Call Roger Turner, 202-967-2260.

Housewares. Tokyo Trade Center. Aug. 20-25. As recently reported in a leading U.S. business magazine, the demand for American consumer goods "has barely been scratched" in Japan. Japan's 105 million people with more purchasing power than ever before represent a significant new target of opportunity for U.S. exporters of housewares, leisure goods, ready-made clothing, and textiles. Call Maury Shea, 202-967-2461.

LASER 73. Munich. Sept. 4-7. Germany is among the fastest growing markets for lasers and electro-optics in Europe. Growth this year of this $120 million market should be 30-50 percent; The U.S. controls 80 percent. U.S. firms have an opportunity to get into this market at the beginning of Germany's cyclical upswing. Contact Roswitha Augusta, BIC-226.

Medical Management Systems and Equipment. Frankfurt Trade Center. Sept. 10-14. Germany's hospital modernization and expansion program for 1973 to 1975 is expected to be well over $2 billion. Prospects look good for U.S. producers of highly advanced and sophisticated equipment in patient care, EDP and monitoring systems, disposables, sterilization, pollution and contagion control, building services, housekeeping, and food preparation. Contact Don Schmadel, BIC-226.

International Aerospace Show. Sao Paulo. Sept. 14-23. The Brazilian Government is supporting this first aerospace fair. The show is designed to open the doors of the entire Latin American aerospace/airport market to international aerospace companies and provides unique sales opportunities. The focus of the U.S. exhibition will be on ground and airborne equipment and instruments, airport equipment, and aircraft parts, assemblies and accessories. Call Jim Hoye, 202-967-3871.

Industrial and Commercial Refrigeration and Airconditioning Equipment and Components. Paris Trade Center. Sept. 17-21. Research indicates that the French market for refrigeration and airconditioning equipment is expanding at a rapid rate. The market in 1971 was valued at $137 million, and is expected to increase by 43 percent by 1975, reaching an annual level of almost $200 million. Contact W. S. Gaines, BIC-226.

Advanced Cold Chain Equipment. Tokyo Trade Center. Sept. 17-22. Process freezers (particularly quick freezers), automatic product control and handling systems for cold storage warehouses (including computer assisted systems), and refrigerated showcases, will be the focus of this exhibition. Estimated at $10-15 million for imported equipment in 1971, the Japanese market for this product category is expected to grow considerably in the next few years. Call Randy Miller, 202-967-4056.

Algiers International Trade Fair. September. The United States will participate in this major trade event, an un-

paralleled opportunity to enter a $1.5 billion import market. All product groups will be included, especially the following: infrastructure and construction; information retrieval systems; office equipment; oil and gas equipment and services; irrigation and agribusiness equipment and services; and transportation equipment. Call David Christensen, 202-967-2307.

ENVITEC 73. Duesseldorf. Oct. 8-14. This comprehensive specialized trade show in the field of environmental protection covering air, water, and noise measurement and control equipment will be held at the new Duesseldorf fair grounds. Protecting the environment is a major concern in Germany. Approximately $9 billion will be spent during the 1971-1975 period for pollution equipment. Call Robert Levine, 202-967-4056.

Audio-Visual Equipment. Frankfurt Trade Center. Oct. 11-16. Use of audio-visual equipment is expected to reach approximately $300 million by 1975. U.S.-made equipment is in the forefront of developments for the West German market. This exhibition, to be held concurrently with the Frankfurt Book Fair, will give U.S. manufacturers, especially those not yet in this market, an opportunity to gain a large share of sales. Contact Loretta Allison, BIC-226.

Technology 73. Tel Aviv International Trade Fair. Oct. 23-31. Three product groups will be exhibited: instrumentation, electrical power generating equipment, and ground power support equipment for commercial aircraft. Call Frank Manzolillo, 202-967-3752.

Environmental Pollution Control Equipment. Osaka Fair Grounds. Nov. 7-12. Reflecting the high priority Japan attaches to its increasing environmental pollution control problems, Prime Minister Tanaka has indicated their solution will be a major objective of his administration. Commerce's participation in this event will focus on air, water, and solid waste pollution control equipment. Call Bob Levine, 202-967-4057.

Systems for Automation in the Metals Industries. Frankfurt Trade Center. Nov. 12-16. Automation systems and components are in demand in West Germany by the machine tool industry and other metal industries from iron and steel production to finished product manufacturing such as automobiles and household appliances. Call Charles M. Whitley, 202-967-4961.

Systems '73. Munich. Nov. 27-30. Europe's most important computer exhibition will promote the latest EDP hardware, software, and accessories to key end-users in a 24-country marketing area. Demand in West European countries is projected to reach $4 billion in 1974. Ambitious national programs to sharply increase computer installations throughout Eastern Europe promise growing sales opportunities for a broad range of EDP equipment and services. Call John Wolf, 202-967-4941.

Microcircuits, Design, Test and Production Equipment. Frankfurt Trade Center. Dec. 10-14. This exhibition is planned to help U.S. firms successfully enter and compete in this very rapidly expanding, highly competitive microelectronics market. The U.S. still has a technological lead but lead time is getting shorter every year. Call Don Schmadel, 202-967-4601.

Licensing, Investment Abroad

Licensing and investment proposals from foreign firms are listed in these columns. Specific product interests in each proposal are highlighted in bold type to facilitate identification and each proposal is preceded by the appropriate four-digit product number taken from the Standard Industrial Classification (SIC) Manual.

Background information on opportunities abroad and assistance on overseas investments are available from the Office of International Finance and Investment, BIC-286F, U.S. Department of Commerce, Washington, D.C. 20230. "P" numbers should be used when responding to specific proposals.

WTD indicates that a World Trade Data Report containing financial and background information on the foreign firm is available for $5 from the Department of Commerce, BIC-266, Washington, D.C. 20230, or from any Commerce Field Office.

OPIC indicates that the country involved is eligible for investment insurance coverage written by the Overseas Private Investment Corporation. Information regarding applicable coverage may be obtained from OPIC, Washington, D.C. 20527.

KOREA — U.S. firms contemplating investment in Korea may wish to obtain a copy of **Joint Ventures in Korea.** Published by the Korea Chamber of Commerce and Industry, the booklet lists promising industries for investment and Korean companies seeking U.S. partners and licensors. For further information write Mr. Park Myoung-Chan, Director of Office of Investment Promotion Center, 111 Sokong-dong, Chung-ku, Seoul. P-73063. The booklet is available from the Office of International Finance and Investment, BIC-286F, U.S. Department of Commerce, Washington, D.C. 20230.

0174 — ZAMBIA — Company seeks joint venture to develop **citrus industry.** Has approximately 5,000 acres in Copperbelt for project. F. H. Gerlach, American Embassy, Lusaka. OPIC. P-73059.

1411 — ARGENTINA — Owner of **black granite deposit covering about 150,000 acres** located in southeastern corner of Mendoza Province proposes joint venture arrangement to exploit deposit. Participation by U.S. partner to include partial capitalization, technical managerial and operating personnel, and sales management. Owner is substantial businessman but has little knowledge of granite business. Quality of granite claimed to be very high with surface presence in form of flagstone susceptible to exploitation without need for cutting. Labor costs low, Argentine mining law offers incentives to foreign investment, but location of deposit is remote, although some access roads in area. Peru Automotores S.A., Calle Peru 470, Buenos Aires. Attn: Julio Nailberg, president. OPIC. P-73073.

1521, 2542 — JAPAN — Licenses and/or capital investment for the **construction of wooden and prefabricated housing utilizing the 2 x 4 system** sought for five year construction program calling for 9.3 million new units. Both government and private firms will be involved. Addresses of the various companies involved are available from Office of International Finance and Investment, BIC-286F, U.S. Department of Commerce, Washington, D.C. 20230. P-73070.

2511 — LIBERIA — Company seeks joint venture to **manufacture wooden furniture.** U.S. partner would provide 50% equity, technology and access to U.S. market. Factory would utilize local timber; produce semi-finished furniture for export; finished for domestic market. A. Benedict Weeks, managing director, Auriole Enterprises, Inc., P.O. Box 1546, Monrovia. Additional information available from Office of International Finance and Investment, BIC-286F, U.S. Dept. of Commerce, Washington, D.C. 20230. WTD. OPIC. P-73060.

2834 — NIGERIA — Joint venture to **establish pharmaceutical plant** in Western State. U.S. partner would provide technical know-how, machinery and managerial expertise. Would receive 50 percent equity, management control for several years. Primary markets are Western and Kwara States with combined population of 14 million. Current pharmaceutical needs met basically through imports. Dr. R. O. Akinsete, Chief Medical Officer, Ministry of Health, Ibadan, Western State, Nigeria. P-73056.

2834, 2844 — SWITZERLAND — Seeks joint venture, merger, acquisition by **U.S. manufacturer of pharmaceuticals, cosmetics or other products.** Swiss firm interested in development and marketing of non-prescription pharmaceuticals, cosmetics. Presently distributes in Europe and Africa. Maurice Gross, president, Laboratoires FB Unis S.A., 1008 Prilly-Lausanne, Switzerland. P-73053.

3079 — TURKEY — Seeks U.S. participation in establishment of **plastics plant.** Feasibility study of the project is available. Mehmet Y. Ariyoruk, Basbokanlik Devlet Planlama, Teskilati Mustesailigi, Ankara. P-73061.

3253 — BELGIUM — Producer of **marble mosaic floor and stair tiles, terazzo floor tiles, screenblocks and splitblocks** seeks licensing or joint venture arrangement for expansion purposes. Consideration would be given to U.S. partner acquiring majority interest. Annual sales approximate $2.5 million, with around 20 percent representing exports. Plant area is 214,000 sq. ft. on 10-acre site. Employees number approximately 225. Con-

sulate General of Belgium, Industrial Sec., 50 Rockefeller Plaza, Suite 1104, New York, N.Y. 10020. P-73066.

3325 — ITALY — Experienced manufacturer of metallic shot seeks license and/or advanced technology for production of **cast steel shot.** Company planning plant expansion to meet growing needs of Italian market. Abrasivi Metallici, Via Zanella 90, 20033, Desio, Italy. WTD. P-73069.

3448 — ARGENTINA — Medium-sized manufacturer of industrial metal structures seeks license for manufacture of U.S. **industrial metal structure systems.** RAPIT, S.R.L., Moreno 970, 3° Piso, Oficina 67, Buenos Aires. WTD. P-73055.

3494 — AUSTRALIA — Licensing agreement for **pipeline metering valves** sought, particularly two-inch valves. Planned major pipelines as well as increasing interest in natural gas appear to offer significant potential in this field. A. M. Mathew, general manager, Mangrovite Industries Ltd., Sydney. WTD. P-73067.

3494 — JAPAN — Established manufacturer of ferrous and nonferrous castings is urgently seeking a license to produce **valves for handling liquefied natural gas (LNG).** Particularly interested in know-how for valves incorporated in LPG tankers and storage/unloading facilities. Company, which is Japan's largest manufacturer of valves for refrigerators, employs 580 and has current monthly sales of $833,000. Seiji Matsuura, chief engineer, Valve Dept., Morikawa Sangyo Co., Ltd., 150 Oaza Imojima, Koshoku City, Nagano Prefecture. WTD. P-73072.

3494 — JAPAN — Manufacturer of castings and valves seeks license for the manufacture of **stainless steel specialty valves.** Desires to modernize machine shops; if necessary, establish a joint venture on 50-50 basis. Presently produces gate, flash and globe valves. Monthly sales exceed $300,000; employs 217. Takashi Asayama, Technical Dept., Shikoku Metal Industries Co., Ltd., Osaka Office, 49 Itachibori Kitadori 1-chome, Nishi-ku, Osaka. P-73054.

3500 — ARGENTINA — Licenses to produce **gas turbines, heavy equipment for the petroleum industry, paper machinery and petrochemical equipment.** Presently manufactures, repairs marine engines; also assembles power generation and petrochemical equipment. In order to expand activities, has purchased additional production equipment, along with present machinery valued at $2 million. Manuel Rodriguez Vila, vice president, Standard Motor Argentina SAICF, Pedro de Mendoza 2053, Buenos Aires. WTDR. OPIC. P-73058.

3552 — TURKEY — Joint venture or license to manufacture **cotton textile machinery.** Project involves production of 200,000 spindles annually. Feasibility study available. To obtain copy write: Sumerbank Genel Mudurlugu, Ulus, Ankara. P-73071.

3559 — ARGENTINA — License to produce **brickmaking machines.** Firm presently imports and distributes ball bearings, machine tools, clay refractories and general industrial equipment. Alfredo Haberjan, Drake-Argentina S.R.L., Mexico 508, Buenos Aires. P-73062.

3573 — INDIA — Technical assistance, equipment to manufacture **electronic desk calculators.** Interests include minicomputer style calculators with card readers; calculators with slide rule capability, storage memory. Produce primarily for domestic market. Feasibility study under preparation. Firm presently engaged in engineering, construction activities. M. R. Desai, manager, Manufacturing Div., G. R. Desai Assoc. (GRD), 61 Haribhakti Colony, Old Padra Rd., Baroda 7, Gujarat. P-73064.

3732 — INDIA — Entrepreneur proposes joint venture to manufacture **fiberglass pleasure boats.** U.S. partner to invest up to 40 percent of equity capital and supply designs and technical know-how. Production to be for export. K. Kurian Uthup, municipal chairman, Kottayam, Kerala State. OPIC. P-73065.

6552 — PANAMA — Local corporation owning 73 acres of land bordering on the only seagoing channel of the Port of Pedregal desires joint venture with American firm for the **development of a shipping and distribution center.** New trans-isthmian highway now under construction may also terminate at this point. Javier Romero, president, Immobiliaria Roca, S.A., Altos Edifico Revilla No. 1, David, Rep. de Panama. OPIC. P-73057.

7011 — BELGIUM — Gasoline retailing chain desires collaboration with American firms experienced in **operation of motels and restaurants on limited access highways.** Network of excellent new highways now being completed and at least ten franchises for combination motel/service stations are expected to be awarded in the next two years. J. Lequeu, director, Elf-Belgium, 11 Chaussee De Vilvoorde, 1020 Brussels. P-73068.

Future Construction Abroad

NIGERIA — The Western State's Four Year Development Plan (1970-74) calls for construction of **25 district hospitals of 30 to 40 beds each and five general hospitals of 50 to 100 beds each.** Only 12 of the 25 district hospitals have been completed by an Italian construction company, and State Government officials are interested in U.S. firms for the remainder. The Ministry is currently reviewing some new proposals, but has indicated willingness to consider others as they are received. Tentative deadline for certain proposals will be in April, at the beginning of the new fiscal year. There are no prequalification requirements, however, the Ministry will look favorably on companies which are well-established and experienced in tropical construction. Hospital designs have been completed, and the Western State Government hopes to have them completed and in operation before the end of the Development Plan. No participation by the Federal Nigerian Government or international organizations is foreseen. While the Western State Government has not yet sought external financial assistance, it probably would not refuse any reasonable offer. The State Ministry of Health is responsible for implementing the project. Key personnel in the Ministry include Dr. A. A. Aderemi, Commissioner of Health; and Dr. R. O. Akinsete, Chief Medical Officer. Interested U.S. firms should direct inquiries to the Ministry of Health, Ibadan, Western State, Nigeria, as soon as possible, since some projects are already under consideration. Applicants should be prepared to supply estimates covering construction and equipment for hospitals, including laboratories, X-ray, refrigerated mortuary, and other basic facilities.

CANADA—Officials at Manitoba Hydro have described their development work in the Northern part of the province as a "three legged stool." One leg, described in the Jan. 8 issue of *Commerce Today*, involves construction of additional generating stations and transmission lines on the lower Nelson River over the next 15 years. A separate undertaking, but related to the overall northern development scheme, is the **Jenpeg project designed to control the water of Lake Winnipeg.** The Jenpeg location will combine a control structure for regulating the Nelson River with a generating station for the production of hydro-electric energy. The site has an estimated capacity of 160,000 kw. The Soviet Union was awarded the contract for the supply and installation of five turbine-generators at the Jenpeg power station. The third facet involves the **Churchill River diversion scheme, and the low level flooding of South Indian Lake.** Tenders will be called within the next few months for a portion of the Churchill River diversion work, and Hydro officials have stated that they welcome cooperation with U.S. firms. Full information on types of supplies and equipment required for these projects, and details on tendering procedures can be obtained from: A. W. McGillivray, Purchasing Manager, Manitoba Hydro, Taylor Rd., Winnipeg, Manitoba.

DENMARK — Det Danske Staalvalsevaerk A/S (Denmark's only steel rolling mill) has announced plans for a **huge expansion of both its electric arc fur-**

Future Construction Abroad Summary Available

A quarterly summary of future construction projects abroad, contract award stories and significant foreign government tenders published in **Commerce Today** and **Commerce Business Daily** during October, November and December 1972 is available to U.S. firms from the Trade Opportunities Division, BIC-267, Room 4813, U.S. Department of Commerce, Washington, D.C. 20230.

A pre-addressed mailing label should be included with the request. The summary, which may also be reviewed at any of the 42 Commerce Department Field Offices, alphabetically lists project summaries by country in five distinct classes; airport, seaport and railroad and highway projects; hydro and thermal electric plant and irrigation projects; hospital, hotel and housing projects; industrial plant projects; and comprehensive development projects. Whenever possible, names of contractors and responsible agencies are cited, as well as original publication dates.

A few copies of the third quarter summary are also available upon request and will be distributed on a first-come, first-served basis.

naces and plate mill, expected to cost about $72 million. Basic engineering has been awarded to the firm DEMAG of Duisburg, Germany. Civil engineering and construction will be handled by a consortium made up of DEMAG and two Danish firms, Kampsax A/S and Hojgaard & Schultz A/S, both of Copenhagen. It is hoped that invitations to bid on the first half of the project will be released by spring. The new plant is to be erected on filled land adjacent to the present mill, and work is expected to begin by mid-summer. When completed, the new steel plant will increase output by ½ million tons. The project calls for installation of four electric arc furnaces, each of 100 tons capacity, one continuous slab casting machine and one bar casting machine. Together with the new steel producing facility, a similar extension of the present heavy platemill is planned. Plans call for the work to be completed in two phases. The first phase includes installation of two electric arc furnaces and one continuous slab casting machine. Extension of the plate mill is expected to run parallel to the new steel production. Both of the new furnaces and the enlarged mill will be equipped with the latest in numerically controlled machinery. U.S. firms interested in supplying the needed type of equipment for this project should write directly to: Erland Thrane, Managing Director, Det Danske Staalvalsevaerk A/S, DK-3300 Frederiksvaerk.

ETHIOPIA—Final details of the **Washed Coffee Project** (also called the Coffee Processing Project) are in the final stages of approval by World Bank headquarters. The project will involve construction of 100 washed coffee centers, modernizing about 100 older washing factories; 400 kms. of access roads; and the organization of a number of farm cooperatives. The project will come under the supervision of the newly established, autonomous, "Washed Coffee Project Implementing Unit" to be headed by Dr. Asrat Felleke (now Chief of the Agricultural Development Dept. of the Awash Valley Auth. Most of the construction will take place in Sidamo Province. Opportunities for sale of U.S. manufactured equipment may exist in several areas, primarily in road building. A preliminary list of road construction equipment needed for the first stage of the project is available from the U.S. Department of Commerce, Trade Opportunities Sec., BIC-267, Rm 4813, Washington, D.C. 20230. Announcements for bid offers were expected to be released this month. Road construction will get first priority, followed by locally constructed cement washing bins and the other basic structural requirements of the washing centers.

PORTUGAL — The Government has granted to the firm Brisa-Auto Estradas de Portugal, SARL, Lisbon, a concession to construct, operate and maintain a **toll highway system** in Portugal. The main branch provides a 265-kilometer link between Lisbon and Oporto. Two secondary branches around Lisbon will extend 34 kilometers to Setubal and 18.5 kilometers to Cascais. The new system will also extend north of Oporto 28 kilometers to Braga and Guimaraes and eventually provide an access road to the projected new Lisbon airport. The system is scheduled for completion in stages between 1975 and 1981.

Foreign Trade Opportunities

These trade opportunities are based on reports received from the U.S. Foreign Service by the Trade Opportunities Division, BIC-267, U.S. Department of Commerce, Washington, D.C. 20230. The commodities in which foreign firms have interest are indicated by the five-digit numbers and commodity classifications which are from the Standard Industrial Classification (SIC) Manual and the Numerical List of Manufactured Products, 1967 Census of Manufacturers, used extensively by Government and industry.

U. S. firms should be aware that the listing in Commerce Today *of opportunities to trade in specific commodities and technical data does not necessarily imply approval of their export by the Department of Commerce pursuant to the Export Administration Act of 1969. Applicable export licensing regulations must be followed.*

Every effort is made to include only firms or individuals with good reputations. However, the Department cannot be responsible for any trade relations.

Abbreviations used are: I (importer); D (distributor); M (manufacturer); A (agent); R (retailer). To avoid delays, requests for loan material should specify the country, commodity and foreign government agency.

WTDR indicates that a World Trade Data Report on this specific firm is available for $5 from the U.S. Department of Commerce, BIC-266 Washington, D.C. 20230. A WTDR is a trade profile which contains commercial information, including financial references, on an individual foreign firm. Orders must include complete name and address of the subject firm and be accompanied by payment. Further information concerning WTDR's and request forms is available at local Commerce Field Offices.

The mark (•) indicates that this trade opportunity is a request for bids by a foreign government agency.

Direct Sales

Specific foreign firms have expressed interest in direct purchases of the products below. See also the "Agencies" listing.

Field crop farms

01110 — GHANA — Quotations urgently requested (preferably by telegram) for twelve thousand (12,000) metric tons (plus or minus ten percent) of hard dark spring wheat. Irani Bros. & Others Ltd., Attn: Mr. Lababidi (I, M), P.O. Box 672, Accra; cable: Irani. Needed for immediate shipment to sustain production of Ghana's largest flour mill and main source of its flour requirements.

Fisheries

09210 — TAIWAN — Channel catfish, white carfish, yellow bullhead (living). Forward Trading Co., Ltd. (I, D), P.O. Box 1261 Taipei.

Meat products

20119 — CANADA — Dressed rabbit skins - color: white, brown, grey. Dressed sheepskins - color: natural white and bleached; sheared and unsheared. The Trap-Line (D, M), 3227 Bearspaw Dr. N.W., Calgary 48, Alberta. WTDR in prep.

Dairy products

20231 — SWEDEN — Casein acid. Sempter AB (I, A, M), Fack, S-104 35 Stockholm.

20231 — TAIWAN — 1000 tons/year of whey powder for animal feed use, human consumption. Cheng Lung Co., Ltd. (I, exporter), P.O. Box 3760, Taipei.

Canning, preserving foods

20310 — FRANCE — Canned sea food: crab meat, canned shrimps. Soric (I, D), 5, Rue Mery, 13002 Marseille. WTDR 8/71.

20332 — GERMANY — Dried, canned, frozen vegetables, all types; c&f; cash against documents. Georg Bruner Kg (contact: Georg Bruner) (M, D, I, exporter), D-8000 Muenchen 81, Musenbergstrasse 29. WTDR 1/73.

Bakery products

20511 — FRANCE — Gluten round bread with 40% of nitrogenous materials and other similar products. Etablissements Brusson Jeune (M, R, D), 31340 Villemur Sur Tarn.

Beverage industries

20851 — GERMANY — Whiskey - bourbon. Exclusive distribution rights. A-Ha-Ge Aussenhandelsgesellschaft GmbH. (D), Postfach 560, Knorrstrasse 1, 71 Heilbronn A.N.

Food preparations

20922 — SWEDEN — Soybean protein, spun or texturized. Semper AB (I, A, M), Fack, S-104 35 Stockholm.

Broad woven fabric mills, cotton

22110 — GERMANY — Any cotton-polyester blended piecegoods (gray goods); f.o.b. or c&f European port; manner of payment: letter of credit; terms of delivery: on regular monthly basis. Direct purchase & agency. G. Koppermann & Co., contact: Werner Pfleghar (D, I, exporter), D-8023 Pullach B. Muenchen Jaiserstrasse 35. WTDR 12/72.

22111 — GERMANY — Cotton duck and allied fabrics (gray goods); f.o.b. or c&f European port; manner of payment: letter of credit; terms of delivery: regularly on monthly basis. Direct purchase & agency. G. Koppermann & Co., contact: Werner Pfleghar (D, I, exporter), D-8023 Pullach B. Muenchen, Jaiserstrasse 35. WTDR 12/72.

22111 — GERMANY — Cotton duck and allied fabrics, gray goods; term of payment: letter of credit; term of delivery: monthly regular basis. Direct purchase & agency. Texma GmbH, contact: Johann Schiessl (D, I, exporter), D-8000 Muenchen-Solln, Begasweg 34. WTDR 1/73.

22112 — GERMANY — Cotton sheeting and allied products (gray goods); f.o.b. or c&f European port; manner of payment: letter of credit; terms of delivery: regularly on monthly basis. Direct purchase & agency. G. Koppermann & Co., contact: Werner Pfleghar (D, I, exporter), D-8023 Pullach B. Muenchen, Jaiserstrasse 35. WTDR 12/72.

22112 — GERMANY — Cotton sheeting and allied fabrics (gray goods); terms of payment: letter of credit; terms of delivery: monthly regular basis. Direct purchase & agency. Texma GmbH, contact: Johann Schiessl (D, I, exporter), D-8000 Muenchen-Solln, Begasweg 34. WTDR 1/73.

22113 — GERMANY — Cotton print cloth yarn fabrics (gray goods); f.o.b. or c&f European port; manner of payment: letter of credit; terms of delivery: regularly on monthly basis. Direct purchase & agency. G. Koppermann & Co., contact: Werner Pfleghar (D, I, exporter), D-8023 Pullach B. Muenchen, Jaiserstrasse 35. WTDR 12/72.

22113 — GERMANY — Cotton print cloth yarn fabrics (gray goods); terms of delivery: on regular monthly basis; terms of payment: letter of credit. Direct purchase & agency. Texma GmbH, contact: Johann Schiessl (D, I, exporter), D-8000 Muenchen-Solln, Begaswegs 34. WTDR 1/73.

22114 — ARGENTINA — Blue denim, brushed, weighing between 13 to 15 ozs. in rolls of 80 to 150 meters each. La Piemontesa S.A., c/o Carlos A. Deferrari (M, D), Austria 1901, Buenos Aires. Interested in immediate purchase; requests quotations.

22114 — GERMANY — Cotton colored yarn fabrics, toweling and dishcloth fabrics and napped cotton fabrics, incl. blanketing (gray goods); f.o.b. or c&f European port; manner of payment: letter of credit: terms of delivery: on regular monthly basis. Direct purchase & agency. G. Kopperman & Co., contact Werner Pfleghar (D, I, exporter), D-8023 Pullach B. Muenchen, Jaiserstrasse 35. WTDR 12/72.

22114 — GERMANY — Cotton fabrics, napped (gray goods). Terms of payment: letter of credit; terms of delivery; regular monthly basis. Direct purchase & agency. Texma GmbH, contact: Johann Schiessl (D, I, exporter), D-8000 Muenchen-Solln, Begasweg 34. WTDR 1/73.

22115 — GERMANY — Fine cotton goods (gray goods); f.o.b. or c&f European port; manner of payment: letter of credit; terms of delivery: on regular monthly basis. Direct purchase & agency. G. Koppermann & Co., contact: Werner Pfleghar (D, I, exporter), D-8023 Pullach B. Muenchen, Jaiserstrasse 35. WTDR 12/72.

22115 — GERMANY — Cotton fabrics, fine, gray goods; terms of payment: letter of credit; terms of delivery: regular monthly basis. Direct purchase & agency. Texma GmbH, contact: Johann Schiessl (D, I, exporter), D-8000 Muenchen-Solln, Begasweg 34. WTDR 1/73.

22116 — GERMANY — Broad-woven cotton fabrics and specialties (gray goods); f.o.b. or c&f European port; manner of payments: letter of credit; terms of delivery: on regular monthly basis. Direct purchase & agency. G. Koppermann & Co., contact: Werner Pfleghar (D, I, exporter), D-8023 Pullach B. Muenchen, Jaiserstrasse 35. WTDR 12/72.

22116 — SWEDEN — Fabrics for manufacture of trousers, i.e. denim. Areqvist & Nordin AB (I, D, M), Box 39, S-510 35 Bollebygd. WTDR 12/72.

22117 — GERMANY — Finished cotton broad-woven fabrics (corduroy, voile, denim, cambric); f.o.b. or c&f European port; manner of payment: letter of credit; terms of delivery: regularly on monthly basis. Direct purchase & agency. G. Koppermann & Co., contact: Werner Pfleghar (D, I, exporter), D-8023 Pullach B. Muenchen, Jaiserstrasse 35. WTDR 12/72.

22117 — SOUTH AFRICA — Fabrics, broad-woven: cotton, for manufacture of men's, boys' clothing, women's underwear, sheets, pillowcases. Pep Stores Ltd. (M, R), Van Riebeeck Rd., P.O. Box 76, Kuils River, Cape Province. WTDR 1/73.

Broad woven fabric mills, manmade fiber, silk

22210 — BELGIUM — Nylon, polyester, acrylage, viscose. Haayer & Co. (I, M), 3 Plezantstraat, 9160 Hamme, Durme. WTDR in prep.

22214 — SWEDEN — Polyester/cotton fabrics for manufacture of trousers. Areqvist & Nordin AB (I, D, M), Box 39, S-510 35 Bollebygd. WTDR 12/72.

22218 — GERMANY — Man-made fiber, piece goods; polyester, rayon, mixtures. Terms of delivery: on regular monthly basis; terms of payment: letter of credit. Direct purchase & agency. Texma GmbH, contact: Johann Schiessl (D, I, exporter), D-8000 Muenchen-Solln, Begasweg 34. WTDR 1/73.

22218 — SOUTH AFRICA — Fabrics, broadwoven: man-made fiber, silk; for manufacture of men's, boys' clothing, women's underwear. Pep Stores Ltd. (M, R), Van Riebeeck Rd., P.O. Box 76, Kuils River, Cape Province. WTDR 1/73.

Broad woven fabric mills, manmade fiber, silk

22219 — JAMAICA — Nylon stretch fabric: medium quality, for ladies' blouses; 60 in. width, minimum weight — 1/3 lb. per yd; various colors, designs. Quotations, swatches requested. Shelly-Ann Ltd., contact: David Gray (M), 74 Old Hope Rd., Kingston 5. Estimate approximately 60,000 yds. annual requirement.

Broad woven fabric mills, wool

22313 — SOUTH AFRICA — Fabrics, broadwoven: of wool, mohair, similar fibers; for manufacture of men's, boys' clothing. Pep Stores Ltd., (M, R), Van Riebeeck Rd., P.O. Box 76, Kuils River, Cape Province. WTDR 1/73.

Knitting mills, products

22540 — BURUNDI — Men's, boys', children's knit underwear. Correspondence in French. Dinos Tsimidopoulos (I, D, R), B.P. 333, Bujumbura. WTDR 10/72. Firm opening new clothing dept within 30-60 days. Goods should be securely packed and banded against damage and pilferage.

Textile goods

22940 — BELGIUM — Synthetic waste of man made fibers. Haayer & Co. (I, M), 3 Plezantstraat, 9160 Hamme, Durme. WTDR in prep.

22940 — ECUADOR — Waste materials from textiles such as thread and material (wool, acrylics, other synthetics). Descriptive information requested. Coritex C.A. (M), Primera Transversal, Camino a Nayon, P.O. Box 3253, Quito. WTDR in prep.

22992 — NIGERIA — Once used jute bags, marked or unmarked, of about 44" x 27" or smaller. Requirement for 50 to 100 thousand bags per mo. Sunday Olu, Omole & Co. (I, A), P.M.B. 3102, 79, Karimu St., Surulere, Lagos.

Men's, boys' furnishings

23271 — SPAIN — Men's, women's western style sports trousers. Importacion y Comercio Exterior S.A., Attn: Jose M. Vilaro (I, A, D), Avda. de la Catedral, 4-D, Barcelona-13. Catalogs requested; exclusive distributorship desired.

Women's, misses', juniors' outerwear

23393 — GERMANY — Jeans, women's and misses', any type; date of delivery: regular monthly basis; terms of payment; letter of credit. Direct purchase & agency. Texma GmbH, contact: Johann Schiessl (D, I, exporter), D-8000 Muenchen-Solln, Begasweg 34. WTDR 1/73.

Women's, misses', children's, infants' under garments

23413 — BURUNDI — Knit or woven children's and infants' nightwear. Correspondence in French. Dinos Tsimidopoulos (I, D, R), B.P. 333, Bujumbura. WTDR 10/72. Firm opening new clothing dept within 30-60 days. Goods should be securely packed and banded against damage and pilferage.

Girls', children's, infants' outerwear

23610 — BURUNDI — Children's and infants' outerwear: dresses, blouses, blousettes, waists, knit and woven sport shirts. Correspondence in French. Dinos Tsimidopoulos (I, D, R), B.P. 333, Bujumbura. Burundi, Africa. WTDR 10/72. Firm opening new clothing dept. within 30-60 days. Goods should be securely packed and banded against damage and pilferage.

23690 — BURUNDI — Children's and infants' outerwear: playsuits, playshorts, dungarees, jeans, slacks, skirts, jerseys, creepers. Correspondence in French. Dinos Tsimidopoulos (I, D, R), B.P. 333, Bujumbura. WTDR 10/72. Firm opening new clothing dept. within 30-60 days. Goods should be securely packed and banded against damage and pilferage.

23690 — GERMANY — Jeans, girls', children's and infants', any type; terms of payment: letter of credit; terms of delivery: regular monthly basis. Direct purchase & agency. Texma GmbH. (contact: Johann Schiessl) (D, I, exporter), D-8000 Muenchen-Solln, Begasweg 34. WTDR 1/73.

Fur goods

23710 — JAPAN — Fur coats ready made. Direct purchase & agency. Kawanabe Fur Salon, Ltd. (D, R), 40 Shin Tanaka Bldg., 12-5 Daimyo 2-Chome, Chuo-ku, Fukuoka City. WTDR in prep.

Fabricated textile products

23920 — SWEDEN — Plastic table runners. Gerhards Konstforlag AB (I, M), P.O. Box 94, S-493 01 Leksand. WTDR 12/72.

23961 — SOUTH AFRICA — Men's, boys' suit, coat findings, related products. Pep Stores Ltd. (M, R), Van Riebeeck Rd., P.O. Box 76, Kuils River, Cape Province. WTDR 1/73.

23963 — SOUTH AFRICA — Women's, children's apparel findings, trimmings. Pep Stores Ltd. (M, R), Van Riebeeck Rd., P.O. Box 76, Kuils River, Cape Province. WTDR 1/73.

Sawmills, planing mills

24212 — SPAIN — Beech, birch and Oregon pine rough lumber, three to four in. in nominal thickness. Quotations c.i.f. Barcelona. Hijo de A. Vilar, S.A., Attn: Eugenio Vilar G. (M), Apartado Correos 490, Sabadell.

Wood products

24911 — NETHERLANDS — Specially prepared wood base briquets for open fireplaces. Representations for Netherlands. P.A. Van Der Linden en Zoon (I, D), 127 de Ruyterkade, Amsterdam.

24994 — GERMANY — Sheets, cork and rubber for computer housings. Blefa Ag, (contact: Mr. H. Uhr) (M), 5901 Kreuzthal, Huettenstr 43. WTDR in prep.

24996 — NETHERLANDS — Acoustical tile board, similar products. Exclusive distributorships only requested for Benelux countries or Netherlands. Nierstrasz N.V., Attn: Mr. K. Bos (I, D), P.O. Box 4141, Amsterdam. WTDR 9/72.

Paper mills

26212 — TAIWAN — 80,000 - 100,000 sheets/year of wood duromat tabloid, 24 x 19 in. x 0.031 in. Double Happy Trading Co., Ltd. (I, D), P.O. Box 1598, Taipei.

26216 — GERMANY — Fine paper. Wilhelm Seiler GmbH, contact: Frau Felten (M, D), 56 Wuppertal, Postfach 201411.

Converted paper, paperboard products

26414 — FRANCE — Glues, adhesives for shoemaking industries: adhesive tape, cement bond polyamides and polyesters cement. Direct contact with manufacturers requested. Descriptive literature, price lists requested. Compagnie Moderne de Construction Mecanique (D, M, A), 68 Ave. Magondy 33600, Pessac. WTDR 4/72.

26416 — AUSTRIA — Paper coated with carbon black, electrically conductive, weight about 70 grams, for production of spark discharge stencils (funkschablonen). W. Koreska (I, D, M), Wattgasse 48, P.O. Box 98, A-1171 Vienna. WTDR 10/72.

26432 — GABON — Wrappers to cover baked bread. Require bags for 30,000 loaves per day, 10 million loaves per yr. Correspondence in French required. Catalogs, descriptive materials requested. Societe Meuniere et Avicoletdu Gabon (SM QUP) (M, D), B. P. 462, Libreville. WTDR in prep.

Paperboard containers, boxes

26543 — SWEDEN — Paper table runners. Gerhards Konstforlag AB (I, M), P.O. Box 94, S-793 01 Leksand. WTDR 12/72.

Books

27315 — ECUADOR — Paperback pocket books, fiction or nonfiction, for all age levels. Catalogs, price lists requested. Mi Dulce Senor (I, R), Aleman 220, El Batan, Quito. WTDR in prep. Firm wishes to carry complete line of English-language paperback pocket books printed in the U.S.

General commercial printing

27526 — SWEDEN — Posters, fine art reproductions. Cassetto (I, R), Fack, S-200 62 Malmo.

Industrial chemicals

28150 — FRENCH WEST INDIES — Petroleum byproduct known as mexyl made into synthetic bristles for manufacture of brushes. Charles Defort (M), Pointe de Negres, Fort de France, Martinique.

28183 — SWITZERLAND — Chemicals for rubber, plastics processing industries. Direct purchase & agency. W. Tschopp AG, Attn: Mr. Willy Tschopp (I, A, D), Dreispitzstr. 10, 4000 Basel.

28190 — SWITZERLAND — Additives, agents, ancillary chemicals for manufacture of detergents, soaps, similar products. Direct purchase & agency. W. Tschopp AG, Attn: Mr. Willy Tschopp (I, A, D), Dreispitzstr. 10, 4000 Basel.

28197 — SWEDEN — Sodium casein. Semper AB (I, A, M), Fack, S-104 35 Stockholm.

Synthetic materials

28210 — SWITZERLAND — Plastics films, sheets, rods, etc., in stock shapes plastic packaging materials (transparent films etc.) possibly bio-degradable or with other special features. Novelty plastic products for sale to the plastics working industry. Direct purchase & agency. Worbla Ag, Attn: Mr. Bruno Olbrecht (I, A, M), 3063 Papiermuehle Bern. WTDR 11/72.

28210 — UNITED KINGDOM — FYC powder blend or granulated material for blow moulding bottles and jars, including first and second grade with slight and also no color variation; impact and non-impact modified octyl/tin stabilizer; non-toxic food grade and others. Tufcon (Plastic Containers) Ltd., Mr. F. I. Merifield, Mgn. Dir. (M, I, exporter), Eastfield, Scarborough, Yorkshire. Initial quantities required in lots of up to 500 and 1000 tons per yr.

28213 — ISRAEL — Polypropylene (raw material) for production of flat tapes for bags/sacks. Regular requirement: over 1,000 tons per yr. Jewish Agency — AGAF Hateus (world Zionist organization), 5 Ahuzat Bayit St., Tel Aviv. Attn: Mr. Itzhak Fishler, Engineer/Exporter. Wishes complete purchase as soon as possible.

28214 — TAIWAN — Raw materials for manufacturing urea-formaldehyde foam of water-absorbent floral base. Tower Industrial Corp. (I, D), 2nd fl., 64 Nan Yang St., Taipei (100).

Drugs

28331 — SPAIN — Synthetic organic medicinal chemicals excluding antibiotics. Importacion y Comercio Exterior S.A.; Attn: Jose M. Vilaro (I, A, D), Avda. de la Catedral, 14, 4 - D - Barcelona-3. Catalogs requested; distributorship desired.

28331 — SWITZERLAND — Food preservation agents. Prochem Ag (I, D), Lagertsr. 33, P.O.B. CH-8021 Zurich. WTDR 2/72.

28331 — SWITZERLAND — Chemicals for food industry for preservation: antibiotics, similar purposes. Direct purchase & agency. W. Tschopp AG, Attn: Mr. Willy Tschopp (I, A, D), Dreispitzstr. 10, 4000 Basel.

28332 — SPAIN — Organic, inorganic medicinal chemicals. Importacion y Comercio Exterior S.A., Attn: Jose M. Vilaro (I, A, D), Avda. Catedral, 14, 4-D Barcelona-3. Catalogs requested; exclusive distributorship desired.

Soap, detergents, cleaning preparations, perfumes, cosmetics

28430 — ARGENTINA — Textile and leather scouring compounds, wetting agents, processing assistants, softeners and finishing agents. Felipe E. Glaubach (A, D), Hipolito Yrigoyen 2470, Buenos Aires.

28430 — SWITZERLAND — Anti-foam, anti-slime preserving agents, for paint, paper industries. Prochem Ag (I, D), Lagerstr. 33, P.O.B. CH-8021 Zurich. WTDR 2/72.

Agricultural chemicals

28790 — NIGERIA — Pesticides including fungicides, herbicides, agricultural disinfectants. Direct purchase & agency. Agrotic Services Ltd. (I, A, D), Oke-Afa, Isolo, P.O. Box 377, Mushin, Lagos State.

Chemical products

28912 — ARGENTINA — Pharmaceutical gelatin capsules. Farmacia Dr. Valentini (D), San Martin 2339, Mar del Plata, Provincia Buenos Aires. Interested in immediate purchase. Requests quotations.

28930 — TAIWAN — 550,000 - 600,000 lbs/yr in drum, newsprinting inks, slow-speed rotary duplex black inks. Double Happy Trading Co., Ltd. (I, D), P.O. Box 1598 Taipei.

28990 — SWITZERLAND — Oils, extracts, agents for manufacture of cosmetics. Direct purchase & agency. W. Tschopp AG, Attn: Mr. Willy Tschopp (I, A, D), Dreispitzstr. 10, 4000 Basel.

28993 — SWITZERLAND — Pure, natural essential oils. Prochem Ag (I, D), Lagerstr. 33, CH-8021 Zurich. WTDR 2/72.

Paving, roofing materials

29523 — GERMANY — Asphalt and tar roofing, siding products. Reif-Handel GmbH, contact: Herr Angersbach (M, I, D, A), 475 Unna, Werler Str. 22-24. WTDR in prep.

Products of petroleum, coal

29990 — NETHERLANDS — Specially prepared fuel briquets for use in fireplaces. Representations requested for Netherlands. P.A. Van Der Linden en Zoon (I, D), 127 de Ruyterkade, Amsterdam.

Fabricated rubber products

30691 — PHILIPPINES — Industrial v-belts. Engineering Equipment, Inc. (I, D), 391 J. Rizal St., Mandaluyong, Rizal, WTDR 12/72.

30692 — PHILIPPINES — Fire hoses, one and one half inch to two and one half inch diameter, 35 to 40 kg. per sq. in. bursting pressure, rubber-lined. Engineering Equipment, Inc. (I, D), 391 J. Rizal St., Mandaluyong, Rizal. WTDR 12/72.

Plastic products

30796 — NETHERLANDS —Decorative ceiling tiles, non-inflammable, made of PVC or similar materials. Representations for Netherlands. P.A. Van Der Linden en Zoon (I, D), 127 de Ruyterkade, Amsterdam.

Leather gloves, mittens

31510 — GERMANY — Ladies' and men's sailing gloves, made of fine leather. Correspondence in German. Gebrueder Sorgenicht, (contact: Herr H. Sorgenicht) (D, R, I), 43 Essen, Alfredstr. 102, Postfach 1516.

Flat glass

32110 — SOUTH AFRICA — Flat glass: all types, sheet, plate, laminated, wire. Direct purchase & agency. Richards & Barlow (Pty.) Ltd. (D, M, R), Fisher Ave., Epping Industria 2, Cape Province. WTDR 12/72.

Structural clay products

32512 — GERMANY — Facing tiles. Reif-Handel GmbH, contact: Herr Angersbach (M, I, D, A), 475 Unna, Werler Str. 22-24. WTDR in prep.

32592 — GERMANY — Fired clay blocks, bricks and tile special shapes, and insulating fire bricks and shapes. Reif-Handel GmbH, contact: Herr Angersbach (M, I, D, A), 475 Unna, Werler Str. 22-24.

Concrete, gypsum, plaster products

32722 — GERMANY — Roof and floor units, precast concrete products. Reif - Handel GmbH, contact: Herr Angersbach (M, I, D, A), 475 Unna, Werler Str. 22-24. WTDR in prep.

32752 — GERMANY — Building plasters and prefabricated building materials. Reif-Handel GmbH, contact: Herr Angersbach (M, I, D, A), 475 Unna, Werler Str. 22-24. WTDR in prep.

Abrasive, asbestos, nonmetallic mineral products

32911 — BRAZIL — Synthetic diamond powder for cutting and working agate, amethyst, rose quartz, other semi-precious stones. Exp. Imp. Benetti Ltda. Attn: Mr. C. Benetti (M, I), Rua General Osorio 83, Sala 1204, Vitoria, State of Espirito Santo. WTDR in prep.

32962 — NETHERLANDS — Vibration mountings, acoustical floorings, ceilings. Exclusive distributorships only for Netherlands and/or Benelux countries. Nierstrasz N.V., Attn: Mr. K. Bos (I, D), P.O. Box 4141, Amsterdam. WTDR 9/72.

Steel mill products

33123 — TAIWAN — Mild steel sheet in coil (thickness from 0.5 mm to 1.6 mm, width of coil 2 inches up, quantity about 100 m/t). Yu Lung Trading Co., Ltd. (I, D), 20 Yung Chang St., Taipei.

33127 — PAKISTAN — Secondary steel sheets including tin plates (waste), mild steel sheets cuttings and electrical steel sheet cuttings. Direct purchase & agency. Essemdeesons Enterprises (I, A), 17 Lawrence Rd., Lahore. WTDR 10/70.

33159 — VENEZUELA — Wire mesh of welded steel, preferably galvanized, for concrete reinforcing in construction of roofs for prefabricated houses. Mesh should be 1.3 mm thick, openings to be one by one in., in rolls of 12 mts by 1.5 to 3 mts wide. First order will be for approx. 20,000 mts. This is expected to be duplicated within few months. Corre-

Special Action

Each of the following trade notices is deemed to rate the special attention of American manufacturers and suppliers by the U.S. Commercial Officers overseas.

02720—KOREA—Horses, breeding and racing; 200 Anglo-Arab, part-bred mixture racing horses. No limitation sex but not geldings, ages up to 4 yrs. Preferably to import 50 head in March, 50 in July, and 100 in later 1973. Cable offer breakdown c.i.f. Pusan by sea and c.i.f. Kimpo Airport by air transportation requested. Korean Horse Affairs Assn. (KHAA) (quasi-government org.), 685, 1-KA, Sungsu-Dong, Sungdong-ku, Seoul. Cable address: Hanmasa, Seoul, Mr. Shin Yoon Soo, Gen. Mgr.

28210 — UNITED KINGDOM — Hot melts for all applications in packaging, furniture, bookbinding trades. Alfred Adams & Co. Ltd. (M), P.O. Box 23, Reliance Works, West Bromwich, Staffordshire. Attn: R. G. Ward, Mng. Dir. Company wishes to be in position to supply hot melts by end of this year and would like to hear urgently from American firm wishing to cooperate in an agreement.

29920 — SWITZERLAND — Advanced lubricating oils and greases, incl. hydraulic fluids, quenching and cutting oils, liquid rust preventatives, anti-corrosion and pollution specialties, oils for metal-working and construction industry. Adolf Schmids Erben AG, Attn: Mr. H. Leuzinger (A, D, M). Effingerstrasse 17, 3001 Bern. WTDR 7/71.

32410 — HONDURAS — 2,000 bags white cement and 500 bags coloring concrete; estimated monthly orders 500 bags. Quotation on prices requested. Fabrica de Bloques y Tubos "Matamoros", Attn: Ing. Carlos M. Matamoros (I, M), Frente Cuartel de Casamata, Tegucigalpa, D.C.

33160 — PORTUGAL — Stainless steel 18/0, 0.7 mm gauge in 70 cm wide coil; 500 metric tons, deliveries 100 metric tons per mo. starting February. Payments by L/C 180 day terms. Ajacto-Industria de Artigos Metalicos, Lda (M), 89 Rua Do Rio, Nogueira, Maia. Telex Rodvil 2213-P. WTDR in prep. Firm must complete purchase arrangement immediately.

35420—LEBANON—Complete line of equipment for manufacture of steel nails, nuts, bolts in new facility to be established Cairo, Egypt, estimated annual output of which is 2,400 tons. Cost of equipment desired put at around $1 million. Establissments William Haddad (I, A, D, R), P.O. Box 2774, Beirut. WTDR 12/72.

35422 — ISRAEL — Die forging press, system air hammer or friction, capacity about 100 units per min., about 300 ton pressure. Telex: 33-3218. Appliance Merchandising Co. I td. (A), P.O. Box 2085, Tel Aviv. WTDR 1/71. Firm has urgent order to meet. Inquirer wishes to buy only from firms not yet represented in Israel.

35591 — VENEZUELA — Request urgently quotations, catalogs, descriptive materials for complete installation of modern processing refinery plant capable producing between 150/200 tons daily of common table salt. Vacuum recristalization system requested. Firm already operates two similar plants. Indusalca-Industrias Salineras, C.A. (M), Apartado 3290 and 3A Calle Campo Alegra, Quinta Palma Sola, Caracas. Mr. Ignacio Juaristi. Firm wishes to complete purchase arrangements as soon as possible.

50930 — ITALY — Steel scrap, possibly from demolished automobiles, suitable for steel making. Initial requirement three to five consignments each consisting of 10,000 to 15,000 tons. Provide detailed information on quality offered. Quote dollar prices f.o.b. nearest U.S. port. Prices should allow for three percent commission payable to Italian firm. Galaimpex (A), Via Marco Papio 15, 00175 Rome. Telegraphic address: Galaimpex Roma.

spondence should be in Spanish. Catalogs, descriptive materials requested. O. C. Y. P. Industrial, C.A., Attn: Mr. Jorge Martinez (construction company), Avenida Bella Vista Centro Commercial Leunsa, Local 20 Maracaibo. WTDR in prep. Firm hopes to complete purchase arrangements within two months.

Primary smelting, refining of nonferrous metals

33397 — GERMANY — Non-ferrous metals: antimony, chromium, cobalt, cadmium, nickel, bismuth, beryllium, irridium, osmium, palladium, rhodium, ruthenium, rhenium thorium, zirconium, and others. American Consulate General, 7 Urbanstrasse, 7 Stuttgart, c/o Mr. David C. Lacey.

Cutlery, hand tools, general hardware

34230 — AUSTRIA — Handtools, general hardware for do-it-yourself hobbyists. Direct purchase & agency. Georg L. Karasek & Co. Ges. M.B.H. (I, A), Salzgries 3, A-1010 Vienna. WTDR 11/72.

34291 — ISRAEL — Metal twist locks for transporting containers on trucks and trailers (between 4-12 locks for each vehicle). Initial requirement: about 1,000 units, to be followed by regular yearly supply according to requirement. Israel Trucking Board (Government authority for trucking in Israel), 63 Yehuda Maccabi St., Tel Aviv; Attn: Joe Criden, Chief Engineer.

Heating apparatus, plumbing fixtures

34310 — ISRAEL — Bathtubs, both standard and "whirlpool" type, latest designs, for apartment hotels. Alexander Shoob Ltd. (building contractor), 65 Rothschild Blvd., Tel Aviv. WTDR 4/69.

34336 — SPAIN — Items for use and handling of gas and liquid fuel Uncesa (gas burner installer), Paseo del Marques de Zafra 21, Madrid 28. WTDR 12/72. Interested in manufacturing under license.

Fabricated structural metal products

34412 — VENEZUELA — Structural steel, prefabricated bridges, Bailey or panel type; surplus, used and new. Need specifying condition if surplus or used, price, per section c.i.f. La Guaira, delivery time. Require 30 bridges per yr., average length 150 ft. Also requires interlocking sheet steel piling equivalent to Fuji F.S.P. II A or Larssen type II or III. CCC Assocs. (consulating firm), Apartado 50433, Caracas 105.

34423 — GERMANY — Metal moulding and trim for computer housings. Blefa Ag (contact: Mr. H. Uhr) (M), 5901 Kreuzthal, Huettenstr. 43. WTDR in prep.

Screw machine products

34521 — GERMANY — Bolts, nuts, other standard industrial fasteners for construction of computer housings. Blefa Ag (contact: Mr. H. Uhr) (M), 5901 Kreuzthal, Huettenstr. 43. WTDR in prep.

Fabricated wire products

34815 — PHILIPPINES — Perforated screens used in sugar milling operations and fourdinier wire for pulp and paper operation. Engineering Equipment, Inc. (I, D), 391 J. Rizal St., Mandaluyong, Rizal. WTDR 12/72.

34819 — PHILIPPINES — Stitching wire for banana packaging. Engineering Equipment, Inc. (I, D), 391 J. Rizal St., Mandaluyong, Rizal. WTDR 12/72.

Engines, turbines

35111 — ARGENTINA — Water turbo alternator 200/250,000 kw. Seta Ingenieria S.R.L. c/o Ing. Dante Seta (engineering firm), Cordoba 1452, Piso 5, Of. E, Rosario, Prov. Santa Fe. Descriptive literature, price lists requested.

35195 — TURKEY — Marine engines, outboard motors. Yasar Holding Co., A.S. (holding company), Meydan Apartmani, Izmir. WTDR 9/72.

Farm machinery

35225 — IVORY COAST — Complete machinery for kenaf fiber (harvesting, decortication and treating of fibers for final use); 3,000 hectares (7,413 acres) to be harvested in 1973; project will grow to 170,499 acres by 1977. Mr. Jean Viart (D, A), Boite Postale 836, Abidjan. Telex 786; tel 35-70-39. WTDR 12/72. Replies requested before February 15.

35225 — TURKEY — Mechanical cotton pickers. CEPAKO (cotton & seed cooperative), Cumhuriyet Bulvari No. 79, Izmir. WTDR in prep.

35227 — BELGIUM — Electric lawnmowers, integral riding; floating mower. Saint Hubert S.C. (A, D, I), 5960 Orple-Grand.

35228 — RWANDA — Drying machines for edible beans; capacity of two tons per day; operate on diesel fuel; capable of reducing humidity from 20% to 12%; moisture meter to measure content of moisture in edible beans; battery operated and calibrated to measure between 5-30% moisture. Requests detailed literature. Cooperative TRAFIPRO. B.P. 302, Kigali.

Construction, mining, materials handling machinery, equipment

●35300 — IRAN — One trailing suction hopper dredger, 650 cubic meter capacity for delivery Bandar Pahlavi, Iran. Customer: Ports and Shipping Org., Ministry of Finance, Chaharrahe Shah Kucho Simorgh, Tehran. Bid no. 51/10/M with deadline of March 1. Tender documents available at $40 from: Adibi-Harris Associates, Consulting Engineers, Aluminum Building, Shah Avenue, Tehran.

35314 — FRANCE — Auxiliary truck mounted cranes for truck loading (articulated and with tower). Bennes Marrel (M), 13 Rue Pierre Copel, 42 - Saint-Etienne. WTDR 9/72.

35323 — GREECE — Cement carrying, crushing, pulverizing machinery, equipment. George Tambakis (M), 22 Vasilisis Olags St., Thessaloniki. Firm is establishing cement plant in Thessaloniki area, with capacity of about 1 million tons per yr., and ready to procure equipment for extraction, crushing, pulverizing of limestone. Requests brochures, quotations, delivery times.

35340 — TURKEY — Elevators. Yasar Holding Co., (holding company), Meydan Apartmani, Izmir. WTDR 9/72.

●35310 and 35360 — SINGAPORE — The Singapore Housing and Development Board is making an evaluation of their building techniques. They are interested in passenger and material hoists for buildings up to 25 floors, small concrete pumps, generators, and new techniques for scaffolding and building of molds. Interested companies should refer to Singapore Telegram 3574 and send specifications and other data to: Commercial Officer, American Embassy, Singapore.

35370 — ISRAEL — Hydraulic lift table/platform, mobile or fixed; electric or manual; loading capacity: 3,500 lbs; height: up to 5'3"; length: up to 6'7". Requirement: two units for latest delivery end February 1973. Rogosin Industries of Israel Ltd. (M, I, exporter), P.O. Box 8, Ashdod. Attn: J. Melnik, Mech. Engineer. WTDR 7/71. Firm has to complete purchase within two months.

Metalworking machinery

35421 — ISRAEL — Semi-automatic equipment (not nc) for production of individual parts, & assembly of squirrel-cage centrifugal blowers/rotors including housings; blowers produced on demand, not for stock; capacity: maximum 10 units per day; size range of blowers 10 in. to 40 in. in diameter; wheel widths up to 18 in. maximum; blades may be fastened to rims by best means. Blowers end use will be commercial airconditioning, ventilation, refrigeration and heating. Firm needs equipment urgently to meet expanded production schedule. Krashin Engineering Works Ltd. (I, M, exporter), 3 Yehuda St., Ramat-gan 52504. WTDR in prep.

35451 — GERMANY — Rotary carbide cutters, milling cutters for titanium alloys. Stahlwerk Stahlschmidt & Co. KG, contact: Herr Kaeufer (M, D), 4 Duesseldorf Qon Wiesenstr 30, Postfach 190120.

35481 — GERMANY — Rolling mill rolls and pilger rolls. Rhinex GmbH & Co. KG (contact: Herr Schoessler) (I, D), 415 Krefeld, Dahlerdyk 31. WTDR in prep.

35482 — AUSTRIA — Portable power-driven handtools for do-it-yourself hobbyists. Direct purchase & agency. Georg L. Karasek & Co. Ges.m.b.H. (I, A), Salzgries 3, A-1010 Vienna. WTDR 11/72.

35482 — SPAIN — Pneumatic-powered hand tools. Ricardo de Manuel S.A., Attn: Ricardo de Manuel Porta (I, A, D), Londres, 65-67, Barcelona-15.

35483 — NETHERLANDS — Gas type welding apparatus, including machines. Representations for Netherlands, West Germany, Great Britain. Interlas N.V. (I, A, D), 15 Amersfoortsestraat, Soesterberg. WTDR 4/72.

Special industry machinery

35511 — SWEDEN — Cottage cheese processing machinery. Requests technical info. Mjolkcentralen (Swedish Milk Producers Assoc.) (D, M), Dalagatan 3, S-101 10 Stockholm.

35512 — FRANCE — Slicers, Choppers, grinders, cutter, dicers, tenderiziers including parts, attachments for commercial food preparation machines. Catalogs, descriptive materials requested. Dito SA (I, D, A), 23200 Aubusson. WTDR 5/72.

35512 — GERMANY — High speed slicing machines, including paper inserting device, (combination sausage/bacon,

cheese, bread), capacity: 00 - 400 cuts per min. Hermann Waldner K.G. (M, A), IM Weissen Bild, D-7988 Wangen/-Allgaeu.

35513 — COLOMBIA — Brewery machinery, related equipment. Eduardo Puyana, Pres., Cerveceria Andina S.A. (I, D, M), Calle 22 B No. 30-75, Apartado Aereo 3471, Bogota. WTDR 8/72.

35513 — EL SALVADOR — 80,000-120,000 lbs. per month capacity machines and equipment for making sausages, and plans and specifications for building sausage-making plant in accordance with U.S. sanitary standards. Alejandro Mayer, Jr & Companie "La Indiana" (M, R), 4A Calle Poniente 625, San Salvador.

35513 — HONDURAS — Complete machinery for installation of sausage making plant. Desires quotations, catalogs. Ruben Cuellar, Adali, S. de R. L. (I, D, M), 4A, Calle Entre 10 y 11 Avenidas, Comayaguela, D.C. WTDR 8/72. Firm desires to complete purchase arrangements as soon as possible.

35521 — ECUADOR — Garnetting machines, and spinning machines for textiles. New, or used if in good condition. Catalogs, descriptive materials requested. Cobitex C.A. (M), Primera Transversal, Camino a Nayon, P.O. Box 3253, Quito. WTDR in prep.

35521 — FRANCE — Commercial bleaching; dyeing; finishing equipment. Catalogs, price list requested. Chaix et Co. (I, A, D), 84 Route de Bordeaux, 33260 Latste. WTDR 12/71.

35521 — PAKISTAN — Tender quotations in English from manufacturers for setting up either complete or part of a new spinning mill of 25,000 spindles to be located near Nowshera or at Peshawar in NWFP. Quotations for each machinery, accessories, instruments separately both on f.o.b. and c.i.f. Karachi basis. Submission direct to company latest by Feb. 15. Gul Mohammed & Bros., Ltd. (I, R, M), Pul Pukhta, Peshawar.

35521 — PHILIPPINES — One polyester filament yarn plant including necessary utilities, capacity 1,500 m.t. per annum, to be operational January 1974; One polyester staple fiber plant including necessary utilities, capacity 3,000 m.t. per annum, to be operational January 1975. Specifications available from Trade Opportunities Staff, BIC-267, U.S. Dept. of Commerce, Washington, D.C. 20230. Filipinas Synthetic Fiber Corp. (M), 10th Floor, China Banking Bldg., Paseo de Roxas, Makati, Rizal. Firm desires quotations on or before February 15, 1973.

35521 — SOUTH AFRICA — Textile machinery for manufacture of wearing apparel, blankets. Pep Stores Ltd. (M, R), Van Riebeeck Rd., P.O. Box 76, Kuils River, Cape Province. WTDR 1/73.

35521 — TAIWAN — Spinning and weaving machinery. Ching Mei Printing & Dyeing Co., Ltd. (M), 3rd Fl., 125 Hsin Sheng S. Rd., Sec. 1, Taipei (106).

35531 — SPAIN — Woodworking machinery — two automatic lathes for manufacturing furniture rounds. Catalogs, prices c.i.f. Barcelona. Hijo de A. Vilar, S.A., Attn: Eugenio Vilar G. (M), Apartado de Correos 490, Sabadell.

35531 — TURKEY — Machinery for producing 100 pieces of bedroom furniture per day consisting of one bed, a three compartment wardrobe, a dresser and a bed table. Machinery required for combining artificial board with natural veneer and coating with polyester. Sesa Muhendislik ve Musavirlik A.S. (engineers & consultants), Cumhuriyet Caddesi 21, Taksim, Istanbul.

35531 — TURKEY — Machinery to produce daily 100 cu.m. three layer particle board from wood chips. Tevor Agac Sanayii A.S. (M), Rihtim Caddesi, Yogurtcu Sukru Sokak, Kadikoy, Istanbul.

35540 — ISRAEL — Machinery for automatic production of wallpaper to include equipment for coating (with plastic), printing, embossing and cutting. Catalogs/price quotations/delivery time requested airmail. Golde Chaim & Co. (I, D), 244 Ben Yehuda St., Tel Aviv.

35540 — QATAR — Plant to manufacture tissues, towels, napkins, related products. Interested in contacting U.S. companies which have experience in setting up plant or which can supply required paper feedstock. Aljabor Trading Co. (I, A, D, contractors), P.O. Box 295 Doha. Telex DH 264 Attn: Harold Smith, Mgr. WTDR in prep.

35591 — INDIA — One sulphur grinding/pulverizing jet type mill of three to five metric ton capacity every eight hours, operating on atomizing principle. End-product should be 400-500 mesh and feed material sulfur lumps. Lscom All India Medical Corp. (M), Mulji Jetha Bldg., 185 Princess St., Bombay 400 002.

35591 — TURKEY — Machinery to produce 5-6 tons nylon 6 or 66 filaments per day including polymerization. Ipsan Sentetik Iplik Sanayii A.S. (M), Manifaturacilar Carsisi 5609, Unkapani, Istanbul.

35591 — VENEZUELA — Titanium pigments plant with capacity of 20,000 to 30,000 metric tons, using sulfuric or chlorin process. Requests price quotation of necessary equipment. Instituto Panamericano de Asesoramiento y Desarrollo Empresarial (I.P.A.D.E.) (non-profit institute under contract to Venezuelan Government Development Corp. (Corporacion Venezolana de Fomento)). Apartado 865, and Edifico Delfina, Avenida Bolivar 105-64, Caracas. Attn: Mr. Jaime E. Contreras Molina, Pres.

35595 — TURKEY — Leather making machinery to process 5,000 pieces suede and normal leather from skins of small animals. Kale Ihracat Sanayi ve Ticaret Ltd., Sti. (exporter; manufacturing company to be formed.), Halaskargazi Caddesi 321/1, Sisli, Istanbul. WTDR 12/71.

35595 — TURKEY — Machinery for making condensors mainly for commercial type refrigerators having display cabinets. Catalogs, proforma invoices requested. Direct sales & agency. Tet Ltd. Sirketi (I, M), Cumhuriyet Caddesi 12/C, Harbiye, Istanbul. Attn: Mr. Halil Uregen.

General industrial machinery

●35600 — BURMA — Five diesel powered air compressors. Tender No. CAP. 49(T)MCY-TC/72/73; bid deadline April 9. Deputy General Manager (Engineering), Timber Corp., Ahlone, Rangoon.

●35600 — IRAN — Annealing and tempering furnace, oil/gas fired, 2500 mm x 1200 mm. Maximum temperature 1200° C. Tender No. 1974/51, bid deadline April 22. Iranian State Railways Purchasing General Department, Tehran. Tender available from Transportation and Capital Equipment Div., U.S. Department of Commerce, Washington, D.C. 20230, ★202-967-2723.

35610 — TURKEY — Water pumping equipment. Yasar Holding Co. A.S. (holding company), Meydan Apartmani, Izmir. WTDR 9/72.

35615 — GERMANY — Electric drum-pumps for liquid chemicals, acids, alkalies, and solvents, 220v, 50 cy. Armaturenfabrik Ernst Horn, Attn: Mr. Beek (M, I), 239 Flensburg, Munketoft 42. WTDR in prep.

35642 — NETHERLANDS — Air washers, air filters, other air purification equipment. Gigengack G.B.I. (I, D, R, exporter), 32 Noordermarkt, Amsterdam. WTDR 10/72.

35642 — SPAIN — Air purifying ozone generators for homes, public establishments. Direct purchase & agency. Mr. Jose Luis Orfila y Mata (I, A, D), Bailen, 39, Barcelona 10.

35690 — NETHERLANDS — Shredders and magnetic separators for industrial and waste disposal purposes. Exclusive distributorships for Netherlands or Benelux countries. Nierstrasz N.V., Attn: Mr. K. Bos (I, D), P.O. Box 4141, Amsterdam. WTDR 9/72.

35690 — PHILIPPINES — Sprinkler systems for fire control purposes. Engineering Equipment, Inc. (I, D), 391 J. Rizal St., Mandaluyong, Rizal. WTDR 12/72.

35690 — PHILIPPINES — Inert gas generator system. Advance Resins Corp. (M), Finch Dr., Cainta, Rizal. Specifications available at above address.

Office, computing, accounting machines

35720 — GREECE — Typewriters and parts. Direct purchase & agency. Chr. Lagonikas & Assoc. Ltd. (I, A, D), 15 Mitropoleos St., Thessaloniki. WTDR 12/72. Requests brochures, quotations.

35730 — SPAIN — Modems. Logabaz, S.A. (D), Paseo de la Habana 132, Madrid 16.

35733 — GERMANY — Door units for computer housing. Blefa Ag (contact: Mr. H. Uhr) (M), 5901 Kreuzthal, Huettenstr. 39. WTDR in prep.

35733 — SPAIN — Parts, attachments for electronic computing equipment including magnetic tapes, discs. Viuda e Hijos de Jose Sitjar S.R.C. (I, D, M), Espronceda, 240, Bajos, Barcelona-5. WTDR 11/72.

35760 — MALAYSIA — Weighing bridges. Pernas Trading Sdq. Bhd. (I, D, R), P.O. Box 656, Bangunan Federal Auto, 91 Jalan Campbell, Kuala Lumpur. Attn: Mgr., Technical Dept. WTDR 1/72.

Service industry machines

35820 — TURKEY — Commercial laundry, dry cleaning, pressing machines. Yasar Holding Co. (holding company), Meydan Apartmani, Izmir. WTDR 9/72.

35852 — NETHERLANDS — Air conditioners, room and unitary, for use in

commercial, institutional, professional premises. Gigengack G.B.I. (I, D, R, exporter), 32 Noordermarkt, Amsterdam. WTDR 10/72.

35854 — PHILIPPINES — Compressors, air-conditioning, used (working or not working), any size, preferably tecumseh, aj-model, or equal. Compressors Philippines (R), 814 Balagtas St., Mandaluyong, Rizal.

35860 — GERMANY — Electric pumps for drums-barrel-tanks for oil up to sae 140, 220 v. Armaturenfabrik Ernst Horn, Attn: Mr. Beek (M, I), 239 Flensburg, Munketoft 42. WTDR in prep.

35890 — TURKEY — Cafeteria ovens, commercial cooking equipment, commercial dishwashing machines, water conditioners for swimming pools. Yasar Holding Co., (holding company), Meydan Apartmani, Izmir. WTDR 9/72.

35891 — NETHERLANDS — Coffee makers and coffee urns, for institutional, commercial use. Gigengack G.B.I. (I, D, R, exporter), 32 Noordermarkt, Amsterdam. WTDR 10/72.

Electric transmission, distribution

● 36100 — AUSTRALIA — 6.6 KV and 3.3 KV air break switchgear fan station and unit auxiliaries. Specification number 2372, bid deadline March 26. Specification available from the Electricity Commission of New South Wales, Box 5256, G.O.O., Sydney, N.S.W. 2001, for $24.

● 36100 — TURKEY — One main and one auxiliary power transformer as well as generator busbars and accessories for seyitomer 150 MW third thermal power unit project. Tender number SOT/1712, bid deadline April 2. Interested bidders must have designed and manufactured transformers for 380 KV 150 MVA and must purchase two sets of specifications at $72 each from Turkish Electric Authority. Turkiye Elektrik Kurumu (Turkish Electric Authority), Santrallar Dairesi, Necatibey Caddesi, Ihlamur Sokak, Maro Han 7th Floor, Ankara.

●36100 — TURKEY — One main and one auxiliary power transformer as well as generator busbars and accessories for seyitomer 150 MW third termal power unit project. Tender No. SOT/1712, bid deadline April 2. Interested firms must purchase two sets of bid documents from Turkish Electric Authority, Santrallar Dairesi, Necatibey Caddesi, Ihlamur Sokak, Maro Han 7th Floor, Ankara, for $72 each.

36113 — SWEDEN — Noise measuring instruments. Arne Gustavsons Industri AB (I, A), St. Paulsgatan 19, S-116 47 Stockholm. WTDR 12/72.

Electrical industrial apparatus

36210 — TURKEY — Generators. Yasar Holding A.S., Meydan Apartmani, Izmir. WTDR 9/72.

36231 — NETHERLANDS — Welding equipment for electric, argonarc, plasma-arc and related types of welding. Representations for Netherlands, West Germany, Great Britain. Interlas N.V. (I, A, D), 15 Amersfoortsestraat, Soesterberg. WTDR 4/72.

36240 — TAIWAN — 6,600 metric tons of artificial graphite electrodes for furnace use, sizes from 8 in. to 16 in. diameter. Olson's Trading Corp. (I, D). P.O. Box 27-107 Taipei.

Electrical lighting, wiring equipment

●36400 — PANAMA — Design supply and erection of 81 KM of 230 KVA transmission line. Tender No. 289, bid deadline March 27. Instituto De Recursos Hidraulicos y Electrificacion (IRHE), Poli Bldg., Ave. Justo Aroesemena and 27 St., Panama City. (P.O. Box 5285, Panama 5, Panama). Specifications are available for review at IRHE Office in Panama, at Panamanian Embassy, Washington, and at Stone and Webster Overseas Consultants, 90 Broad St., New York, N.Y., 10004. Documents can be purchased from IRHE at cost of $50 per set. Information with reference to this tender is available from the Transportation and Capital Equipment Division, BDC-464 U.S. Department of Commerce, Washington, D.C., 20230, ★202-967-5520.

36440 — YUGOSLAVIA — Slot insulation of thermal classes B and F on the basis of inorganic insulation materials; unimpregnated porous samica tapes on basis of mica paper with glass carrier suitable for insulation in vacuum impregnating system for classes B and F especially with promoter; preimpregnated samica tapes of all dimensions of classes B and F on basis of mica paper with glass carrier impregnated with epoxy-resin; commutator "samicanit" of all thicknesses; separating foils or tapes required at pressing in steel moulds as polytetra-flon-etilen tapes; tapes for rotor bandaging on basis of polyester or polyglass; samica foils of thermal classes B and F on basis of epoxy and polyester resins; glass tapes; glass tapes "deglass"; glass silk canvas and glass mat finished for armouring at making compound insulation materials consisting of layers on basis of expoxy and polyester resins; contractible tapes (terphane nt); fine electric asbestos tapes) silicon tapes; nomex 02 to 04 mm thick; mylar foil (hostpfan - melinex); glass asbestos EP insulation) glass strings from 1.5 to 4 mm in diameter; graphite paper of thermal classes B and F required as material for filing slots at installation of windings; material for separation as a consistent grease for coating of moulds at insulation pressing; liquid teflon or equal, for facilitation of separation in making epoxy insulation; conductible varnishes of thermal classes B and F for coating the slot part of insulation for protection against glow discharges. Semi-conductible varnishes of thermal classes B and F for protection winding insulation outside the slot against glow discharge; epoxy impregnating varnishes for vacuum system impregnation of samica insulation; recommendation for choice of conductible varnish insulation and impregnating epoxy varnishes and how many components. Price catalogs, descriptive materials requested. Rade Koncar (I, M), Fallerovo Setaliste 22, 41000 Zagreb. WTDR 10/72.

Communication equipment

36612 — NIGERIA — Teleprinter-speed 50 bands, 66 w.p.m., 5 unit code single or double current 40 ma signalling. Estimated need - 100 units. Communications Joint Services (Nigeria) Ltd. (A), 16, Andrew St., P.O. Box 2433, Lagos. Equipment should be to military standards and specifications. Brochures, price lists should be sent, as well as delivery information; terms of payment are to be agreed upon.

36620 — SPAIN — Data transmission; monitoring equipment, analogical and digital; sensor systems. "Fundacion Para el Desarrollo de la Funcion Social de las Comunicaciones" (foundation), Paseo de la Castellana 112, Madrid 6. Interested in U.S. firms manufacturing modern communication equipment for purpose of introducing same into Spain.

36625 — SWEDEN — Gas detectors. Arne Gustavssons Industri AB (I, A), St. Paulsgatan 19, S-116 47 Stockholm. WTDR 12/72.

Electronic components, accessories

36741 — BELGIUM — Integrated microcircuits (semiconductor networks). Betea S.P.R.L. (I, M), 15 Ave., Geo. Bernier, 1050 Brussels. WTDR 8/71.

36743 — BELGIUM — Semiconductor diodes, solid state, including rectifiers. Betea S.P.R.L. (I, M), 15 Ave., Geo. Bernier, 1050 Brussels. WTDR 8/71.

36749 — BELGIUM — Semiconductor devices, light sensitive; parts. Betea S.P.R.L. (I, M), 15 Ave., Geo. Bernier, 1050 Brussels. WTDR 8/71.

36792 — SWEDEN — Equivalent to following Siemens' metallized polyester MKH capacitors: B 32231-C 6105-J / 1 mirrofarad / 400 volt / 5 percent; B 32231-C 6185-J / 1 microfarad / 400 volt / 5 percent. LKB — Produkter AB (M), Fredsforsstigen 22-24, S-161 25 Bromma. Telex: 10492. WTDR 12/71. Capacitor urgently needed. Annual requirement of capacitors: 2-5,000.

Electrical machinery, equipment, supplies

36992 — GERMANY — Electrically driven adjusting devices for use in hospital beds for adjusting head and foot section of springs, 220v motor, 50 cy, with remote control apparatus with reduced voltage approx. 48 v. Armaturenfabrik Ernst Horn, Attn: Mr. Beek (M, I), 239 Flensburg, Munketoft 42. WTDR in prep.

Motor vehicles, equipment

37141 — BOLIVIA — Parts, accessories for automobiles; especially interested in oil and air filters, brake linings, batteries, tires and antifreeze. Ricacruz Ltd. (I, R), Casilla 291, La Paz. Cable address: Ricacruz, Telex 5305. WTDR 12/72.

Aircraft, parts

37213 — TAIWAN — Used aircraft for cargo transportation purposes, capacity must be over 22,000 lbs., performance: range enough to fly from Taipei to any city in south-east Asia. Mars Express, Inc. (air cargo transportation), 3, Lane 4, Ching Chow St., Taipei (104).

37291 — FRANCE — Aircraft equipment, components, replacement and spare parts and accessories as well as supplies of all types designed for utilization on light duty passenger airplanes up to 300 HP. Direct contact with manufacturers requested. Descriptive literature, price lists requested. Sirbain Ets P (I, A, D), BP 75, 40103 Dax. WTDR 8/72.

Ship building, repairing

37313 — KOREA — Self-propelled ships, nonmilitary: double-rigger shrimp trawlers, 100 DWT, diesel, Florida type, with freezer, preferably used. Samjoung Marketing Service Co. (industrial survey and investment promotion)

126-129, Okchun-dong, Sudaemun-ku, Seoul. President: Mr. Joung-soo Ahn. WTDR in prep.

Railroad equipment

●37400—IRAN—Supply of 200 track gauges aluminum with level for reading superelevation. Tender No. 2440/51. Bid deadline March 10. Iranian State Railways, Tehran, Iran. Copy of Tender documents available from Transportation and Capital Equipment Division, BCABP, Room 1118, U.S. Department of Commerce, 14th and Constitution Avenue, Washington, D.C., 20230, ★202-967-3296.

Engineering, laboratory, scientific, research instruments

38112 — FRANCE — Scientific and research instruments. Direct purchase & agency. Ste G. Beyneix (D), 172, Av. de Toulon, 13010 Marseille.

38112 — TURKEY — Engineering, laboratory and scientific and research instruments, associated equipment to be used in wide array of industries such as textile, leather, paper, sugar, cement, as well as in research laboratories of hospitals, universities. Direct purchase & agency. Yilbak Ticaret A.S. (I, A), Gumussuyu Caddesi 69/71, Isik Apartman, Kat 6, Taksim, Istanbul. WTDR 12/72.

Instruments for measurement, analysis and control

38213 — TURKEY — Mechanical measuring and control instruments to be used in wide array of industries such as textile, leather, paper, sugar, cement. Direct purchase & agency. Yilbak Ticaret A.S. (I, A), Gumussuyu Caddesi 69/71, Isik Apartman, Kat 6, Taksim, Istanbul. WTDR 12/72.

Surgical, medical, dental instruments

38400 — SPAIN — Medical instruments. "Fundacion Para el Desarrollo de la Funcion Social de las Comunicaciones" (foundation), Paseo de la Castellana 112, Madrid 6. Interested in U.S. concerns manufacturing modern medical instruments with a view to introducing same into Spain. Buys and contributes to various institutions for trial. Starting program conjunction health department for trial use diagnostic equipment rural areas connected Madrid by radio for analysis.

38410 — NETHERLANDS — Surgical and medical instruments and apparatus, operating tables and lights, disposables. Exclusive representations for Netherlands. Hendriks en van Steenbergen N.V., Attn: Mr. A. van Rijn (I, D), 33 Haarlemmerstraatweg, Halfweg (NH). WTDR 12/72.

38421 — NETHERLANDS — Disposable articles for hospital, other institutional use. Euromed Medische Artikelen, Attn: Mr. J. A. Pisa (I, D), 48 Parklaan, Bilthoven, Utrecht. WTDR 12/72.

38410 — TURKEY — Surgical, medical instruments, apparatus to be used in hospitals, universities. Direct purchase & agency. Yilbak Ticaret A.S. (I, A), Gumussuyu Caddesi 69/71, Isik Apartman, Kat 6, Taksim, Istanbul. WTDR 12/72.

38423 — SWEDEN — Personal industrial safety devices, such as protective clothing, safety helmets, glasses, gloves. Arne Gustavssons Industri AB (I, A) St. Paulsgatan 19, S-116 47 Stockholm. WTDR 12/72.

38424 — FRANCE — Electronic hearing aids. Optique Haussmann Acoustique (R), 192 Blvd. Haussmann, 75008 Paris. WTDR 11/72.

Photographic equipment, supplies

38611 — MEXICO — Photographic laboratory equipment (developing photo trays, developing tanks, film reels, viewers, printing frames) for exclusive distribution. Industrias Asociadas Kenwoods, S. A. de C. V. (I, D) Homero No. 1425 - 803, Col. Polanco, Mexico, D. F. WTDR in prep.

38612 — GREECE — Photocopying equipment, supplies. Direct purchase & agency. Chr. Lagonikas & Assoc. Ltd. (I, A, D), 15 Mitropoleos St., Thessaloniki WTDR 12/72. Requests brochures, quotations.

38615 — TAIWAN — Medical X-ray films (round corner type, suitable for manual and processor, 90 sec, 3½ min. or 7½ min., 8 in. x 10 in., 10 in. x 12 in., 11 in. x 14 in., 12 in. x 15 in., 14 in. x 17 in., 25 to 75 sheets/package). Olson's Trading Corp. (I, D), P.O. Box 27-107 Taipei.

Watches, clocks, parts

38714 — BAHAMAS — Medium and low priced watches. Allen Electronics Ltd. (I, R), Mr. Clark Allen, P.O. Box N-5528, Nassau. WTDR in prep.

Toys, amusement, sporting goods

39410 — ECUADOR — Educational toys and games, toys and games for children's parties, related items such as whistles, paper plates and cups, candles and decorations. Catalogs, price lists requested. Mi Dulce Senor (I, R), Aleman 220, El Batan, Quito. WTDR in prep.

39410 — SPAIN — Mechanically powered toys, educational toys. Importation y Comercio Exterior S.A., Attn: Jose M. Vilaro (I, A, D), Avada. de la Catedral, 14, 40-D, Barcelona-3. Catalogs requested; exclusive distributorship desired.

39493—FRANCE—Swimming pool equipment. Groupement des Installateurs de Piscines (I, D), 58, Blvd. du Roi Rene, 13100 Aix-en-Provence. WTDR in prep.

Costume jewelry, novelties, buttons, notions

39610 — BAHAMAS — Medium and low price costume jewelry — all items. Selling price range dols 50-dols 150. Mr. Clark Allen (Allen Electronics Ltd.) (I, R), P.O. Box N-5528, Nassau. WTDR in prep.

Manufacturing industries

39999 — AUSTRIA — Novelty materials, gadgets of various kinds for use by do-it-yourself hobbyists. Georg L. Karasek & Co. Ges.mbH (I, A), Salzgries 3, A-1010 Vienna. WTDR 11/72.

Computer, data processing services

73720 — SPAIN — Basic courses in systems analysis, similar to those published by the British National Computing Centre. Informatica Espanola, S.A. (training data processing personnel.), Miguel Angel 26, Madrid (10).

Business services

73920 — NETHERLANDS — Software packages for non-industrial applications such as for utilities, language preprocessors, telecommunications and monitors, for sale in Benelux countries, Scandinavia, West Germany Desisco Nederland N.V., Attn: Mr. R. A. Simoons (information-systems consultant), 595 Populierenlaan, Amstelveen. WTDR 11/71.

Bulgaria In Manufacturing Pact With U.S. Firm, Seeks Others

Bulgaria has signalled its willingness to enter into manufacturing license agreements with P.S. firms.

In November 1972, the Bulgarian Foreign Trade Enterprise "Technika" signed the first known manufacturing license agreement with an American manufacturing firm. It requires the Minnie Punch & Die Co., Union, N.J., to supply all machinery and technical know-how for a process of manufacturing metal stamping dies.

At the signing, the Bulgarians indicated they would like to make contact with American firms which could sell know-how for the manufacture of standardized conventional die components, plastic mold components, and jig and fixture components. They also showed an interest in data for making typewriter keys complete with characters, and for making cutting tools for mining rock-type materials.

The value of the machinery ordered from Minnie — largely for electrical discharge machines — is approximately $250,000. The machinery will be totally paid for in advance by a letter of credit, and the know-how will be paid 50 percent in advance and the remainder upon completion of the technical training program.

U.S. firms interested in pursuing the possibilities of manufacturing license agreements with the Bulgarians may contact the Office of the Bulgarian Commercial Counselor, 50 E. 42nd St., Suite 1501, New York, N.Y. 10017.

Sri Lanka To Purchase Varied Building Materials, Other Items

The Commercial Division of Sri Lanka's Building Materials Corp. invites tenders for the supply of miscellaneous building materials such as plain and figured window glass, door and window fittings, electric lighting accessories, implements and tools, wire mesh and grills and expanded metals, base metals of iron and steel, laminated plastic sheets, fluorescent tubes, insulating tape, linseed oil, unwrought aluminum plates and sheets, pigments, refractory materials, earthenware pipes and scientific instruments. The bid deadline for the tender (No. BMC/GEN/7/1973) is Feb. 27. Write: Commercial Div., Building Materials Corp., P.O. Box 267, 17-1/1 Chartered Bank Building, Colombo 1, Sri Lanka.

Several sets of tender documents are being forwarded to the U.S. Dept. of Commerce and will be available from the Construction and Building Materials Program, Construction and Forest Products Div., BCA&BP-462, U.S. Dept. of Commerce, Washington, D.C. 20230 (202-967-3602) and the U.S. Dept. of Commerce Field Office, 11444 Federal Bldg., 450 Golden Gate Ave., San Francisco, Calif. 94102 (415-556-5864).

Agencies

Specific foreign firms have expressed interest in agency agreements for the products listed below. Exclusive agencies for these products are wanted only if specified.

Canning, preserving foods

20320 —FRANCE— Canned specialties; health foods; all types of dietetic products. Etablissements Brusson Jeune (M, R, D), 31340 Villemur Sur Tarn.

20321 — SPAIN — Baby foods, canned. Fabrica de Productos Quimicos y Farmaceuticos Abello, S.A. (A), Vinaroz 15, Madrid (2).

Beverage industries

20870 — SWITZERLAND — Food flavorings, all kinds, food additives and basic products for food industry, possibly accepted by food and drug legislation in Europe. Food Flavor Bases SA, Attn: Mr. Hans Peter Trefalt, Sales Mgr. (I, M, A, D, broker), Postfach 90, 1814 La Tour de Peilz. WTDR in prep. Hans Peter Trefalt, Sales Mgr., to conduct negotiations with U.S. exporters New York area second half of January 1973; can be reached c/o 35-12 Leverich St., Jackson Heights, N.Y. 11372.

Broad woven fabric mills, cotton

22118 — SWEDEN — Cotton sheets, pillowcases. Scanthor AB (I, A), Grynbodgatan 3, S-211 33 Malmo.

Broad woven fabric mills, manmade fiber, silk

22217—IVORY COAST—Polyester suitings, medium quality up to $1 per yd. Hans Mehr (home office: Ernst Merck Strasse, Hamburg, Germany). (A), Mr. Baumeister, Boite Postale 20992, Abidjan.

Knitting mills, products

22531 — SWEDEN — Printed sweat shirts. Broderna Danielsson AB (I, M), Box 429, S-621 04 Visby 4.

Textile goods

22953 — FRANCE — Impregnated and coated fabrics: polyurethane coated and polyvynilchloride coated. Ets Florence (M, exporter), 7, Rue Marx Dormoy, 33110 Le Bouscat.

22982 — SWEDEN — Fishlines and nets. Erenius & Co. AB (I, A), Box 15023, S-104 65 Stockholm.

22982 — SWEDEN — Polyester cords with nylon sheathing, working pressure 1-20 tons; to be used in hauling operations in mining. Torngren Skandinavia KB (I, D), Wallingatan 12, S-111 60 Stockholm. WTDR 12/72.

22990 — LEBANON — Jute and textile wall covering. Ets. Michel A. Sabbagh (I, A, D, R), Hoyek St., P.O. Box 3994, Beirut.

Men's, boys' furnishings

23271 — SWEDEN — Jeans and corduroys. Areqvist & Nordin AB (I, D, M), Box 39, S-510 35 Bollebygd. WTDR 12/72.

Wood products

24990 — ISRAEL — Water cooling towers, industrial; panels of metal sheeting, "fill" made of wood or plastic; temperature drop: 10 to 15 degree F; capacity: from 40 to 400 tons; with centrifugal fans. Adikor Ltd. (I, A), 74 Petah Tiqva Rd., Tel Aviv. WTDR 7/72.

24994 — LEBANON — Cork floor covering. Ets. Michel A. Sabbah (I, A, D, R), Hoyek St., P.O. Box 3994, Beirut.

24996 — CANADA — Structural pressed wood fiber roof decks, and interior wall paneling, etc. Canadian Construction Product Management - contact: Frank H. Anderson (construction products consultants), 2522 Keele St., Toronto 389, Ontario. WTDR in prep.

Converted paper, paperboard products

26414 — SWEDEN — Self adhesive labels. Broderna Danielson AB (I, M), Box 429, S-621 04 Visby 4.

26416 — FRANCE — Plastic coated paper for industrial use. Bernard Julhiet Conseils (consulting & marketing office), 171, Av. Napoleon Bonaparte, 92500 Rueil-Malmaison.

General commercial printing

27519 — SWEDEN — Decalcomanias: labels. Broderna Danielsson AB (I, M), Box 429, S-621 04 Visby 4.

Industrial chemicals

28100 — ITALY — Organic and inorganic pigments and dyes (FDA approved) for cosmetics industry. O.P.D. (I, A), Via Romolo Gessi 49, 20146 Milan.

28151 — INDIA — Pyrogallic acid - packed in 500 GM bottles, 5 KG and 10 KG tins. Quote c.i.f. Calcutta. Bhupendra Shah & Co. (A, D), P.O. Box 2654, 44 Ezra St., Calcutta 700001. WTDR 6/72.

28181 — ITALY — Enzymes. Chemverga di Carlo Verga (I, A, D), Via G. Romagnosi 20, 00196 Rome.

28185 — AUSTRIA — Industrial organic solvents of all types, in lots of 500 to 1,000 metric tons. C.O.D. terms. Price quotations c.i.f. Rotterdam and specifications requested. JLC - Chemie Josef Lasnausky & Co. (I, D), Praterstrasse 42, A-1020 Vienna. WTDR in prep.

Synthetic materials

28210 — LEBANON — High impact polystyrene, wood grain or metalized, suitable for vacuum forming manufacturing of decorative tiles. Ets. Michel A. Sabbagh (I, A, D, R), Hoyek St., P.O. Box 3994, Beirut.

28211 — FRANCE — Plastic films (for packaging). Bernard Julhiet Conseils (consulting and marketing office), 171 Ave. Napoleon Bonaparte, 92 - Rueil-Malmaison.

Drugs

28340 — SPAIN — Pharmaceutical preparations for human, veterinary use. Fabrica de Productos Quimicos y Farmaceuticos Abello, S.A. (A), Vinaroz 15, Madrid (2).

28341 — SWEDEN — Pharmaceutical preparations affecting neoplasms, endocrine system and metabolic diseases, human use. Imeco Astra Agency AB (I, A), S-151 85 Sodertalje.

28342 — SWEDEN — Pharmaceutical preparations acting on central nervous system and sense organs, human use. Imeco Astra Agency AB (I, A), S-151 85 Sodertalje.

28343 — SWEDEN — Pharmaceutical preparations acting on cardio-vascular system, human use. Imeco Astra Agency AB (I, A), S-151 85 Sodertalje.

28344 — SWEDEN — Pharmaceutical preparations acting on respiratory system, human use. Imeco Astra Agency AB (I, A), S-151 85 Sodertalje.

28345 — SWEDEN — Pharmaceutical preparations acting on digestive or genito-urinary system, human use. Imeco Austra Agency AB (I, A), S-151 85 Sodertalje.

28346 — SWEDEN — Pharmaceutical preparations acting on skin, human use. Imeco Astra Agency AB (I, A), S-151 85 Sodertalje.

28347 — SWEDEN — Vitamin, nutrient, and hematinic preparations, human use. Imeco Astra Agency AB (I, A), S-151 85 Sodertalje.

28348 — SWEDEN — Pharmaceutical preparations affecting parasitic and infective diseases, human use. Imeco Astra Agency AB (I, A), S-151 85 Sodertalje.

28349 — PORTUGAL — All types of pharmaceutical preparations for veterinary use. Gameiro & Ca., Lda. (meat production), Pau Queimado, Montijo.

Soap, detergents, cleaning preparations, perfumes, cosmetics

28445 — SPAIN — Cosmetic creams, cleansing, foundation, lubrication. Fabrica de Productos Quimicos y Farmaceuticos Abello, S.A. (A), Vinaroz 15, Madrid (2).

28445 — SWEDEN — Cleansing & hand hand lotions. Delbanco International AB (I, A), Borrgatan 5, S-211 24 Malmo. WTDR 1/73.

Agricultural chemicals

28790 — ITALY — Germicides and bactericidals for insecticides, disinfectants. Chemverga di Carlo Verga (I, A, D), Via G. Romagnosi 20, 00196 Rome.

Chemical products

28990 — ISRAEL — Sealing compounds, rubber and PVC, for steam injection, to be used for tinplate cans in food canning industry. Ciet-Carmel Import Export Trade Ltd. (I, A), 43 Atzmaut Rd., P.O. Box 217, Haifa. Compounds should be similar to product marketed by Grace (catalog no. B-31), or equal.

28993 — SWITZERLAND — Welding fluxes. Oscar Huber & Co., Attn: Mr. Huber Jr. (I, A), Ringstr. 16, 8600 Duebendorf.

Plastic products

30791 — SWEDEN — Unsupported plastics film, sheets, rods, tubes. Tibnor Palst AB (I, D), Box 5174, S-102 44 Stockholm 5.

30792 — SWEDEN — Foamed plastics products. Tibnor Palst AB (I, D), Box 5174, S-102 44 Stockholm 5.

30793 — SWEDEN — Laminated sheets, rods, tubes. Tibnor Past AB (I, D), Box 5174, S-102 44 Stockholm 5.

30795 — SWEDEN — Industrial plastics products. Tibnor Plast AB (I, D), Box 5174, S-102 44 Stockholm 5.

30796 — SWEDEN — Construction plastics products. Tibnor Plast AB (I,D), Box 5174, S-102 44 Stockholm 5.

30798 — SWEDEN — Consumer and commercial plastic products. Tibnor Plast AB (I, D), Box 5174, S-102 44 Stockholm 5.

Luggage

31610 — SPAIN — Luggage. Juan Tatjer Ferrer (A), Avenida Jose Antonio 489, Barcelona 15.

Glass products

32316 — CANADA — Greenhouses or glass structures. Canadian Construction Product Management - contact: Frank H. Anderson (construction products consultants), 2522 Keele St., Toronto 389, Ontario. WTDR in prep.

Cement

32410 — GERMANY — Portland cement. Unischiff, Schiffahrsts U. Warenhandelsgesellschaft (I, A), 2 Hamburg 1, Spaldingstr. 64; Attn: Mr. Neuffer. Quantity desired is 400,000 metric tons f.o.b.-US port, country of destination: Libya; financial settlement through West-Germany, delivery spread over 1973.

Steel mill products

33124 — INDIA — Heavy steel plates, other steel sections required for shipbuilding. Roberts, McLean & Co. Ltd. (I, A, D), 27-B Camac St., Calcutta 700016. WTDR 12/72.

Iron, steel foundries

33231 — CANADA — Investment or precision castings produced in central or eastern U.S. Metallurgical & Machine Agencies — contact: Edward C. Goodwin, Gen. Mgr. (A), Suite 809, 1315 Silver Spear Rd., Mississauga, Ont.

Secondary smelting, refining of nonferrous metals

33414 — THAILAND — Zinc ingot ASTM D6-70 high grade, 99.95 percent purity. Requests c.i.f. Bangkok prices, literature, samples. Lim Teck Lee (Thailand) Co., Ltd. Attn: Mr. Keehong Lim (A, D, I), 215-7 Rajawongse Rd., G.P.O. Box 362, Bangkok. WTDR 3/72.

Primary metal industries

33911 — CANADA — Upset, drop, and extruded forgings, produced in eastern or central U.S. Metallurgical & Machine Agencies — contact: Edward C. Goodwin, Gen. Mgr. (A), Suite 809, 1315 Silver Spear Rd., Mississauga, Ont.

Cutlery, hand tools, general hardware

34291 — GERMANY — Marine hardware for small to medium sized motorboats. Huesmann GmbH. contact: W. Siefert (I, A, D), 54 Saarlandstrasse, 6530 Bingen/Rhein.

34294 — SWEDEN — Builders hardware. Firma P. E. Hanstrom (I, A), Linnegatan 21, S-114 47 Stockholm. WTDR 12/72.

Heating apparatus, plumbing fixtures

34320 — FRANCE — Irrigation systems for orchards, vegetable gardens. Perrot France, Attn: Mr. Rochut (D, R, M), 22 Rue Drouot, 75009 Paris. WTDR 9/71.

34336 — FRANCE — Incinerators (industrial). Garabet France (I, D), 33 Villa Moderne, 94110 Arcueil.

Fabricated metal products

34945 — NETHERLANDS — Flanges, special couplings for fast and easy attachment to pipes/pipelines. Exclusive representations for Netherlands or Benelux countries. Also interested in license to manufacture, for sales in European countries. Van Ingen-Pijpwerken B. V., Attn: Mr. J. W. van Ingen Jr. (M, shipping piping systems repairs and installations), 4B Oostelijke Handelskade, Amsterdam. WTDR 10/72.

34946 — NETHERLANDS — Special fittings, equipment for hydraulic transfer systems and pipelines, from 1 to 10 in., including manifolds, reducers, similar items. Exclusive representations & direct purchase. Van Ingen-Pijpwerken B.V., Attn: Mr. J. W. Van Ingen Jr. (shipping piping-systems repairs and installations), 4B Oosterlijke Handelskade, Amsterdam. WTDR 10/72.

34990 — LEBANON — Metal table and chair bases. Ets. Michel A. Sabbah (I, A, D, R), Hoyek St., P.O. Box 3994, Beirut.

Engines, turbines

35193 — VIETNAM — Diesel motors, industrial type, stationary, 15-25 H.P., U.S. origin. Chantiers des Ateliers Reunis d' Indochine (CARIC) (I, D), 17 Ben Bach Dang, P.O. Box No F-6, Saigon. Cable address: Carindo Saigon. WTDR 7/71.

35195 — FRANCE — Outboard motors. S.E.A.L. (I, A), 83150 Bandol.

Farm machinery

35225 — GREECE — Cotton picking machines. I. Eskiades & Co. (I, A, D), 16 Lloyd George St., Thessaloniki. WTDR in prep. Firm considering initial order of 30 machines with possible follow-on order of up to 300 machines over 5-year period. Requests quotations, delivery dates.

Construction, mining, materials handling machinery, equipment

35311 — ITALY — Heavy duty offhighway trucks. Catalogs, descriptive materials, prices, including agent's commissions, requested. Sacco Rag. Giovanni (I, A), Via Peirogallo 32, 18038 Sanremo (Imperia).

35314 — JAMAICA — Cranes - all types. Brochures, and quotations f.o.b. or c.i.f. Kingston. Material Handling Equipment Ltd., Attn: Mr. S. O. Naraysingh (I, A, D), 155¾ Orange St., Kingston. WTDR 6/72.

35351 — ITALY — Conveyors and conveying equipment for heavy duty use at steel mills. Catalogs, descriptive materials, prices, including agent's commissions, requested. Sacco Rag. Giovanni (I, A), Via Peirogallo 32, 18038 Sanremo (Imperia).

35361 — JAMAICA — Hoists - chain operated type used for lifting heavy machinery. Brochures, quotations f.o.b. or c.i.f. Kingston. Material Handling Equipment Ltd., Attn: Mr. S. O. Naraysingh (I, A, D), 155¾ Orange St., Kingston. WTDR 6/72.

35362 — SWEDEN — Cranes for steel industry. Iggesunds Maskin AB (I, M), Fack, S-825 00 Iggesund.

35370 — ITALY — Industrial truck, tractors, truck type stackers and the like for heavy duty use at large steel mills. Sacco Rag. Giovanni (I, A), Via Peirogallo 32, 18038 Sanremo (Imperia).

35370 — JAMAICA — Manually operated hydraulic elevating 4-wheel platform trucks 6,000 lbs. capacity for use in concrete block making industry. Brochures, quotations c.i.f. Kingston requested. Construction Equipment Ltd., contact: Garth Moodie (I, A, D), 75 Hagley Park Rd., Box 35, Kingston 10. WTDR 8/72.

Metalworking machinery

35411 — TAIWAN — Metalworking machinery. Keifer Engr. Co., Ltd. (I, A), P.O. Box 1560, Taipei.

35419 — TAIWAN — Machine tools. Keifer Engr. Co., Ltd. (I, A), P.O. Box 1560, Taipei.

35450 — UNITED KINGDOM — Small tools in hole finishing field or tool holding such as boring tools and quick change chucks. Douglas Kane Group Ltd. (I, D), Swallowfields, Welwyn Garden City, Hertfordshire. WTDR 8/72.

35451 — FRANCE — Machine tools accessories (all kinds). Avantex (I), 9 Place du Colonel Fabien, 75010 Paris.

35452 — SPAIN — Precision measuring tools, especially for pollution control. Onuba, S.A. (A), Prim 5, Madrid (4).

35481 — ITALY — Steel mill machinery, equipment. Catalogs, descriptive materials, prices, including agent's commissions, requested. Sacco Rag. Giovanni (I, A), Via Peirogallo 32, 18038 Sanremo (Imperia).

35482 — FRANCE — Surface treatment machines. Avantex (I), 9 Place du Colonel Fabien, 75010 Paris.

35482 — SWEDEN — Soft soldering machines. Sincotraon AB (I, A), Krossgatan 31, S-162 26 Vallingby. WTDR 12/72.

35484 — UNITED KINGDOM — Automotive maintenance and repair tools, garage equipment. Link-Hampson Ltd., Attn: A. F. Pollard, Mgn. Dir. (I, M), Bone Lane, Newbury, Berkshire. WTDR 6/72.

Special industry machinery

35513 — AUSTRIA — Packing, wrapping, filling and sealing machinery for food industry. Exclusive rights for Austria and East European countries. Technical literature, export price lists requested. Herodpack Ges.m.b.H. (I, D, M, exporter), Laxenburgerstrasse 35, A-1100 Vienna. WTDR in prep.

35513 — NETHERLANDS — Packaging machinery, such as case erecting, case packing, case glueing, drop packing, can casing machines, wrap-around systems, bottle inspectors, coding, blister and skin packing, aerosol, palletizing, washing, filling, closing and labeling machines which can handle liquids and powders. Sales territory: Western Europe; also interested in licensing agreements. B. V. Transportsystemen Conveyor Systems. (I, A, D, M, exporter), 30 Tuinstraat or P.O. Box 197, Waalwijk. Attn: Mr. A. Bolte, Mgr.

35513—UNITED KINGDOM—Provender milling plant, seed cleaning and dressing plant, de-hulling plant for cereals; in particular, oats and oilseeds. F. Thompson (Milling & General Engineers) Ltd. (Mr. J. D. Cawood, Joint Mgr. Dir.) (M),

South Hall Works, Cranswick, Driffield, East Yorkshire. WTDR in prep.

35521 — SWEDEN — Machinery for textile screen printing. Broderna Danielsson AB (I, M), Box 429, S-621 04 Visby 4.

35522 — TAIWAN — Textile machinery, parts & attachments. Keifer Engr. Co., Ltd. (I, A), P.O. Box 1560, Taipei.

35552 — SWEDEN — Photographic typesetting machines, bookbinding equipment, graphic arts machinery. AB Fredr. Wagner (I, A, D), Vasagatan 48, S-101 10 Stockholm. WTDR 12/72.

35590 — ITALY — Automatic machines for packaging of sanitary cotton and production of cut-to-size bandages, sanitary napkins, cellulose and non-woven diapers, gauze packs; machines for production of cotton balls, small cleansing pads, cellu-cotton handkerchiefs systems for production of non-woven fabrics. Farmacotone S.P.A. (M), Via G Febbaris 18, 20021 Bollate (Milano).

35591 — TAIWAN — Chemical manufacturing industries machinery & equipment. Keifer Engr. Co., Ltd. (I, A), P.O. Box 1560, Taipei.

35595 — NETHERLANDS — Cryogenic equipment such as dewars, cryogenic thermometers, helium refrigerators, etc. A. de Jong T.H.B.V. (I, D), 130 Industrieweg or P.O. Box 11001, Rotterdam. Attn: Mr. G. G. Van Dam, Purchase Mgr.

35595 — SWEDEN — Drying kilns for tems for production of non woven paper mills Iggesunds Maskin AB (A, M), Fack, S-825 00 Iggesund.

General industry machinery

35614 — ISRAEL — Air compressors, water-cooled, electric-motor driven to fill 3 tanks of 8,000 liters each at pressure of 50 atm; filling-time: from 17 to 50 atm in 1½ hrs maximum (more than one compressor could be used); air to be as dry as possible; units to be mounted on base plates; flexible hoses should be connected to exit. Initial requirement: 50 units. Offers requested either by cable: EMPICI TELAVIV, or by telex: EMPICI 33-3151. M. P. C. Foreign Trade Ltd. (A, D), 45 Bialik St., P.O. Box 451, Ramat-Gan. WTDR 12/72. Requests replies as soon as possible as inquirer has urgent demand from Ministry of Defense.

35615 — SWEDEN — Equipment for applying hot melt, such as electric pneumatic guns, etc. Nordisk Nartro AB (I, A), Box 99, S-123 21 Farsta 1. WTDR 6/72.

35615 — SWEDEN — Pumps for chemical, naval industries. Johnson Pump AB (A, M), Osmundgatan 2, S-703 58 Orebro. WTDR 12/72.

35642 — IRAN — Air pollution sampling and monitoring devices — reduction and monitoring devices. Further specifications should be determined through direct correspondence. Ramsey International (I, A, D), 271 Abbassabad Ave., Apt. 5, P.O. Box 12/1614, Tehran. WTDR in prep.

35642 — SWEDEN — Electrostatic air purification equipment. AB Sevia (I, A, M), Box 102, S-433 00 Partille.

35673 — FRANCE — Electric heating equipment: particularly interested in following types: 1) storage-type: units heating fluids in storage tanks which are integral part of heating unit. All sizes for residential, small commercial and for industrial use (in the latter case, for use in small offices in plants, warehouses). 2) Fan systems: units so organized as to allow a fan to blow over a heating element. N.B. In France, 220 volts, 50 cycle are standard. Also, French-type male plug consists normally of two round prongs & not flat prongs. Some industrial & commercial systems already adapted for three-prong male plugs. While adapters from American to French plugs are normally available, it may be helpful to American suppliers to comment on availability of these in their quotations. CID-Accumulation (I, D, M), 97, Rue Pasteur, 93260 Les Lilas. WTDR 4/71.

35690 — AUSTRIA — Packaging, wrapping machines of all types. Exclusive rights for Austria, East European countries. Technical literature, export price lists requested. Heropack Ges.m.b.H. (I, D, M, exporter), Laxenburgerstrasse 35, A-1100 Vienna. WTDR in prep.

35690 — FRANCE — Compactors (solid wastes). Garabet France (I, D), 33 Villa Moderne, 94110 Arcueil.

35690 — ISRAEL — Encapsulation machinery, related equipment for electronic devices (small transformers, circuits, etc.). Netzer Trading Co. Ltd. (I, A), P.O. Box 822, Haifa.

35690 — JAMAICA — Hydraulic jacks. Brochures and quotations f.o.b. or c.i.f. Kingston. Material Handling Equipment Ltd., Attn: Mr. S. O. Naraysingh (I, A, D), 115¾ Orange St., Kingston. WTDR 6/72.

35690 — NETHERLANDS — Packaging machinery, such as case erecting, case packing, case glueing, drop packing, can casing machines, wrap-around systems, bottle inspectors, coding, blister and skin packing, aerosol, palletizing, washing, filling, closing and labeling machines which can handle liquids and powders. Sales territory: Western Europe. Also interested in licensing agreements. B. V. Transportsystemen Conveyor Systems (I, A, D, M, exporter), 30 Tuinstraat or P.O. Box 197, Waalwijk. Attn: Mr. A. Bolte, Manager.

35690 — TAIWAN — Machinery for making snap fasteners. Everlast Industrial Corp., Ltd. (A, engineering), P.O. Box 58556, Taipei.

Office, computing, accounting machines

35711 — ISRAEL — Small hand-calculating machines. Aharon Paul Ltd. (D), 2 Even Israel St., Jerusalem. WTD in prep.

35731 — SPAIN — Minicomputers. David Poliat (Encanto) (A), Arapiles 17, Madrid 15.

35731 — SPAIN — Data processing machines, electronic, and associated equipment; data computing systems. Fernan-

Special Action

Each of the following agency opportunities is deemed to rate the special attention of American manufacturers and suppliers by the U.S. Commercial Officers overseas.

28213 — ETHIOPIA — 1500 metric tons annually resin for making PVC compound for manufacture of plastic shoes. Quotations c.i.f. Massawa, based upon equal quarterly shipments. Frabi Share Co. (M, I, D), P.O. Box 122, Asmara, or cable Bini-Asmara. WTDR 4/72. Now completing major plant expansion and will need product soon.

35595 — GREECE — Cement mill machinery, including kiln. George Tambakis (M), 22 Vasilisis Olgas St., Thessaloniki. Firm establishing cement plant in Thessaloniki area of one million ton annual capacity; is ready to negotiate purchase of required machinery, including 3 furnaces with 350,000 ton capacity each with first for delivery by mid-1973 and additional two over four year period. Request descriptive material, quotations, delivery times.

36622—ECUADOR—Radio broadcast transmitter (10 kilohertz), equipment for studio and control of type used by disc jockeys, equipment for stereo FM recording studio, and stereo FM radio station equipment. Catalogs, descriptive materials requested. Radio Atahualpa-Radio Fantasia (radio broadcasting stations), Coruna S/N Edificio Artigas, Quito. WTDR in prep.

37130 — TAIWAN — Ten utility trucks, gasoline, mounted with hydraulically-operated two-stage telescopic ladder, GVW approximately 3500 KG., inside body dimension not less than 3000 mm in length and 1500 mm in width for telecommunication line maintenance. Unit price estimated at around $9,000. Quotations on c.i.f. with specifications requested. Ramon Enterprise Corp. (A, I, M), 26 Wu Chang St., Sect. 1, Taipei 100. Firm needs to submit quotations to state-owned Taiwan Telecommunication Administration as soon as possible for emergency purchase project.

38410 — GREECE — Full range of anaesthetic equipment. Direct purchase & agency. Nicolaos Papapostolou (I, A), 45 Pringipos Nicolaou St., Thessaloniki. Requests descriptive material, quotations, delivery times for 40 sets of full anaesthetic equipment. If satisfactory, equipment specifications will be incorporated in U. of Thessaloniki tender to be prepared in early February.

39991 — NORWAY — Fire extinguishers, halogen; Stationary and portable fire extinguishers for use in ship engine rooms on LPG and LNG tankers, on oil drilling rigs, and in petrochemical plants. G. Stenberg (A), Ekebergveien 170, Bekkelagshogda. WTDR 8/71.

39999 — ECUADOR — Advertising or promotional handouts such as small dolls or toys carrying firm's name and advertising slogans. Catalogs, price list, descriptive materials requested. Cobitex C.A. (M), Primera Transversal, Camino a Nayon, P.O. Box 3253, Quito. WTDR in prep.

do de Francisco Esteban (A), Galileo 65, Madrid (15).

35733 — SWEDEN — Keyboard for computer terminals, light-emitting diodes, digital and alphanumeric displays. Kontakt - Teknik AB (I, A, D), Fack. S-136 05 Handen 5. WTDR 12/72.

35733 — SWEDEN — Computer peripherals. AB Fredr. Wagner (I, A, D), Vasagatan 48, S-101 10 Stockholm. WTDR 12/72.

35733 — SWEDEN — Computer peripherals. Tele - Ekonomi AB (I, A), Box 453, S-121 04 Johanneshov. WTDR 7/72.

35741 — SWITZERLAND — Electronic desk calculators. Caesar Mueggli (I, D, R), Lintheschergasse 15, 8023 Zurich.

35760 — FRANCE — Electronic weighing apparatus machines. Escharavil Freres (M, D), Boite Postale 1, 07001 Paris. WTDR 12/72.

35791 — EL SALVADOR — All kinds of office machines and equipment, staplers, addressing, dictating and duplicating machines, other office and store machines, equipment and supplies. Correspondence in Spanish. Galo y Compania (Ing. Miguel Angel Galo) (A), Apartado Postal 1085, Pasaje El Rosal No 26, Colonia Las Rosas No. 1, San Salvador. WTDR 10/72.

35791 — SWEDEN — Mailing machines. AB Fredr. Wagner (I, A, D), Vasagatan 48, S-101 10 Stockholm. WTDR 12/72.

Service industry machinery

35853 — YUGOSLAVIA — Refrigerating equipment for warehouses with atmospheric controls for oxygen, nitrogen, humidity, etc. according to stored commodity (fruit, vegetable, meat, etc.) Request full technical, price information. Jugokomerc (A), Trpimirova 13-15, Zagreb. WTDR 7/69.

35857 — ISRAEL — Refrigerating equipment to be installed on refrigerated trucks carrying food, vegetables, etc.; cooling temperature: minus 12 degrees F to 36 degrees F. Requirement: two units as soon as possible, additional 38 by end 1973. Interested in any of the three U.S. standard sizes. Cable address: Dogor Tel Aviv: Telex 033 525. Adikor Ltd. (I, A), 74 Petah Tiqva Rd., Tel Aviv. WTDR 7/72. Trucks already in construction; first two units required within two months. Manager willing to travel to U.S. soonest to make arrangements with potential supplier.

35857 — NIGERIA — Air conditioners for buses, rail coaches, mobile hospitals. Mr. Eric Brown, Mgr., R. & A. Services Div. of U. A. C. (Technical) Ltd. (A), Taylor Rd., Iddo, P.M.B. 1015, Ebute-Metta, Lagos. WTDR 11/72. Prefers to deal with East Coast manufacturer or supplier to minimize freight costs.

35860 — NETHERLANDS — Greasing equipment, related automotive service station equipment. Exclusive representations for Benelux countries. Lebon & Visser N.V., Attn: Mr. G. Zeldenthuis (I, A, D), 5B Kostverlorenweg, Soest (U.). WTDR 9/71.

35891 — UNITED KINGDOM — Stainless steel catering equipment, gas boiling tops, coffee machines. G. F. E. Bartlett & Son Ltd., Attn: Mrs. Beryl Amthal (I, M), Maylands Ave., Hemel Hempstead, Hertfordshire.

35892 — FRANCE — Liquid and solid wastes destructors. Garabet France (I, D), 33 Villa Moderne, 94110 Arcueil.

35892 — NETHERLANDS — Pollution control equipment, small scale water purification units, for domestic, commercial or institutional use. Firm can carry out total engineering, installation. Exclusive representations requested. Van Ingen-Pijpwerken B.V. Attn: Mr. J. W. Van Ingen Jr. (shipping piping-systems repairs and installations), 4B Oostelijke Handelskade, Amsterdam. WTDR 10/72.

Electric transmission, distribution equipment

36110 — FRANCE — Equipment for production of electronic components. Sic Val 55, Bd. Valbenoite, 42100 St. Etienne. Attn: Georges Bermond. WTDR in prep.

36110 — FRANCE — Equipment for production of electronic components and printed circuits. Anglade S.A. (A, D, M), 7, Rue Aristide Briand, 91-Levallois. WTDR in prep.

36112 — GERMANY — Microwave test equipment, frequency measuring equipment. Werner P. Thron (I, A, D), 6101 Reinheim, Eichweg 10.

36122 — NETHERLANDS — Static inverters, larger than 10 KVA for vital instruments, computers, AC power supply in vehicles or on ships, other special purpose inverters. Sales territory Western Europe; also interested in licensing agreement. Blessing Electronics B.V. (I, D, M, exporter), 465 Terheydenseweg or P.O. Box 397, Breda. Attn: Mr. J. V. D. Horst, Mgr.

Electrical industrial apparatus

36232 — SWITZERLAND — Welding electrodes for maintenance work. Oscar Huber & Co., Attn: Mr. Huber Jr. (I, A), Ringstr. 16 8600 Duebendorf.

Electric lighting, wiring equipment

36430 — FRANCE — Electrical terminals. Girerd S.A. (D, R), 31 Rue Gervais Bussiere, 69100 Villeurbanne.

Radio, television receiving sets

36515 — GERMANY — Hi-Fi components for sale to US military in Germany. Allied Hi-Fi Stereo Export GmbH & Co. (I, A, D), 11, Gartenstrasse, 6456 Langenselbold.

36515 — ISRAEL — Speaker systems, loudspeakers, microphones (all types); amplifiers; other commercial sound equipment including complete public address systems, related products. Hamashbir Electronics (I, A), 76 Giborei Israel St., Tel Aviv. WTDR 5/72.

36520 — DENMARK — Taped music systems (closed circuit) for supermarkets. Rio Trading (I, A, D), 80 Baunegaardsvej, DK-2900 Hellerup. WTDR in prep.

36520 — SPAIN — Cassettes. Fernando de Francisco Esteban (A), Galileo 65, Madrid 15.

Communications equipment

36621 — ISRAEL — Commercial/industrial/military electronic communication equipment to include VHF/UHF equipment. Hamashbir Electronics (I, A), 76 Giboreu Israel St., Tel Aviv. WTDR 5/72.

36624 — GERMANY — Electronic navigational aids; terms of delivery and payment subject to negotiations. RFE Raumfahrtelektronik GmbH & Co., contact: S. Fleischmann (M, A), D-8011 Goeggenhofen Ueber Muenchen, Haus Nr. 13/14. WTDR 12/72.

36625 — FRANCE — Metal detectors. Bureau Europeen de Detection et d'Applications Topographiques (D), 71, Rue Mirabeau, 92-Antony. Attn: Jean Claude Hemery.

36625 — ISRAEL — Electronic search and detection apparatus, including radar and microwave equipment, related components. Hamashbir Electronics (I, A), 76 Giborei Israel St., Tel Aviv. WTDR 5/72.

36625 — PORTUGAL — Radio sounding equipment of low troposphere. Concessus, S.A.R.L. (I, D), Rua Dom Francisco Manuel de Melo 9, Lisbon. WTDR 1/72.

36625 — SWEDEN — Electronic communication apparatus. Avitec (I, M), Kvarnbacksvagen 84, S-161 49 Bromma. WTDR 1/73.

36626 — GERMANY — Accessories, parts for electronic controls for industrial, military applications. Werner P. Thron (I, A, D), 10, Eichweg, 6101 Reinheim.

36627 — GERMANY — Space satellite-borne communications systems. Terms of payment and delivery subject to negotiations. RFE Raumfahrtelektronik GmbH & Co., contact: S. Fleischmann (M, A), D-8011 Goeggenhofen Ueber Muenchen, Haus Nr. 13/14. WTDR 12/72.

36628 — GERMANY — Missile-borne and space vehicle borne navigation systems and guidance systems and equipment. Terms of delivery and payment subject to negotiations. REF Raumfahrtelektronik GmbH & Co., contact: S. Fleischmann (M, A), D-8011 Goeggenhofen Ueber Muenchen, Haus Nr. 13/14. WTDR 12/72.

Electronic components, accessories

36741 — ISRAEL — Integrated microcircuits digital and linear. Hamashbir Electronics (I, A), 76 Giborei Israel St., Tel Aviv. WTDR 5/72.

36742 — ISRAEL — Transistors. Hamashbir Electronics (I, A), 76 Giborei Israel St., Tel Aviv. WTDR 5/72.

36743 — ISRAEL — Diodes, solid state. Hamashbir Electronics (I, A), 76 Giborei Israel St., Tel Aviv. WTDR 5/72.

36790 — GERMANY — Electronic components, accessories for research, industry. Terms of payment and delivery subject to negotiation. RFE Raumfahrtelektronik GmbH & Co., contact S. Fleischmann (M, A), D-8011 Goeggenhofen Ueber Muenchen, Haus Nr. 13/14. WTDR 12/72.

36794 — SWEDEN — Electronic equipment, such as coils, transformers, reactors. Sincotron AB (I, A), Krossgatan 31, S-162 26 Vallingby. WTDR 12/72.

36795 — NETHERLANDS — Cryogenic equipment, such as dewars, helium refrigerators, etc. A. de Jong T.H. B.V. (I, D), 130 Industrieweg or P.O. Box 11001, Rotterdam. Attn: Mr. G. G Van Dam, Purchase Mgr.

36795 — TAIWAN — Computer tapes, 1,200 in.; 2,400 in.; 3,600 in. of 800 BPI,

1,600 BPI, etc. Horward Trading Co., Ltd. (A, M, I), 3, Lane 89, Hulin St., Taipei 105. Firm hopes to complete purchase arrangements within two months.

3679510 — FRANCE — Rotary contactors. Sic Val, 55, Bd. Valbenoite, 42100 St. Etienne. Attn: Georges Bermond. WTDR in prep.

Electrical machinery, equipment, supplies

36940 — UNITED KINGDOM — All types of automotive electrical equipment, devices. Link-Hampson Ltd., Attn: A. F. Pollard, Man. Dir. (I, M), Bone Lane, Newbury, Berkshire. WTDR 6/72.

Motor vehicles, equipment

37112 — FRANCE — Garbage trucks (compacting and incinerating). Garabet France (I, D), 33, Villa Moderne, 94110 Arcueil.

37112 — INDIA — Municipal and conservancy vehicles like refuse collectors, road sweepers, gullypit and cesspool emptiers, sewer cleaners, jetting vehicles. Roberts, McLean & Co. Ltd. (I, A, D), 27-B Camac St., Calcutta-700016. WTDR 12/72.

37141 — UNITED KINGDOM — Accessories for commercial vehicles: mud guards, mud flaps, brackets, body fittings, illuminated signs and sheet racks, tool boxes, cat walks, wing mirrors, security devices, ventilators. Broadwater Mouldings Ltd. (I, D, M), Broadwater Rd., Framlingham, Woodbridge, Suffolk.

37141 — UNITED KINGDOM — Motor accessories. Link-Hampson Ltd., Attn: A. F. Pollard, Mgn. Dir. (I, M), Bone Lane, Newbury, Berkshire. WTDR 6/72.

Ship building, repairing

37320 — FRANCE — Small beach sailboats. S.E.A.L. (I, A), 83150 Bandol.

37322 — GERMANY — Outboard motorboats, plastic. Heulsmann GmbH; contact: W. Siefert (I, A, D), 54 Saarlandstrasse, 6530 Bingen/Rhein.

Transportation equipment

37992 — JAMAICA — Wheelbarrows - 2 types: steel frames with wooden platforms and folding handle bars of steel (4 wheels); steel frames with rubbergrip handles (2 wheels). Brochures, quotations c.i.f. Kingston. Dudley Hosang & Co. Ltd., contact: Mrs. E. Chung (I, A, D), 132 Orange St., Kingston. WTDR 3/72. Seeks agency with U.S. firm located on East Coast.

Engineering, laboratory, scientific research instruments

38110 — GERMANY — Electronic analytical instruments for medical and chemical purposes. Deutsche Medi-Chem GmbH (contact: Mr. Billig) (A, M), 5205 St. Augustin-Niederpleis, Pappelweg 7. WTDR in prep.

38111 — GERMANY — Nautical instruments for motorboats. Huelsmann GmbH, contact: W. Siefert (I, A, D), 54 Sarrlandstrasse, 6530 Bingen/Rhein.

38112 — NETHERLANDS — Cryogenic equipment such as dewars, helium refrigerators, cryogenic thermometers, cryogenic surgical equipment, other cryogenic laboratory apparatus. A. de Jong T.Y. B.V. (I, D), 130 Industrieweg, or P.O. Box 11001, Rotterdam. Attn: Mr. G. G Van Dam, Purchase Mgr.

On Direct Mail Leads

As announced in the Jan. 22 issue of Commerce Today *(Special notice, "Trade Leads Speeded," on Page 65), trade leads in five product categories will be sent by direct mail to interested U.S. firms and will not be published hereafter in the Worldwide Business Services section of this magazine.*

It should be noted, however, that this applies only to leads that originate with private buyers overseas. Foreign government tenders in these product categories will continue to be published.

The five categories involved are: Electronic Data Processing Equipment; Food Packaging and Processing Equipment; Pumps, Valves and Compressors; Airconditioning and Refrigeration Equipment, and Agricultural Machinery and Equipment.

Private trade leads are being mailed to U.S. companies, in the five categories listed above, that are registered on the Commerce Department American International Traders Index (AITI). Firms not presently registered on the AITI should contact the nearest Commerce Business Service Field Office (see list, inside back cover).

Instruments for measurement, analysis and control

38213 — SWEDEN — Ultrasonic doppler flow meter for gases, liquids Harald Bjorkgren AB (I, A), Box 3073, S-171 03 Solna.

38216 — FRANCE — Thickness gauging instruments. Avantex (I, D), 9, Place du Colonel Fabien, 75010 Paris.

Optical instruments, lenses

38310 — SPAIN — Optical instruments. Optica Seller (R), Jose Antonio 45, Novelda (Alicante).

Surgical, medical, dental instruments

38410 — JAPAN — Osmometers for medical use. Catalogs, descriptive materials requested. Kinsho-Mataichi Co., Ltd. (I, A, D), 2-8 Nihonbashi Kayabacho, Chuo-ku, Tokyo, Attn: Mr. J. Sakaguchi, Precision Machinery Dept.

38410 — NETHERLANDS — Surgical instruments, related apparatus. Euromed Medische Artikelen, Attn: Mr. J. A. Pisa (I, D), 48 Parklaan, Bilthoven, Utrecht. WTDR 12/72.

38421 — INDIA — Closed circuit oxygen breathing apparatus. Roberts, McLean & Co. Ltd. (I, A, D), 27-B Camac St., Calcutta - 700016. WTDR 12/72.

38421 — SWEDEN — Elastic bandages, gauze, sterile sutures, etc. Scanthor. AB (I, A), Grynbodgatan 3, S-211 33 Malmo.

38423 — FRANCE — Personal safety appliances, equipment. Amisol S.A. (I, D, M), 52 Rue des Acacias, 75017 Paris.

Ophthalmic goods

38510 — SPAIN — Ophthalmic goods. Optica Seller (R), Jose Antonio 45, Novelda (Alicante).

Photographic equipment, supplies

38610 — SWITZERLAND — Audiovisual training aids for typewriting (typists). Institut Pratique Audio-Visuel, Attn: Mr. Martiano, Dir. (A, end-user), 14 Bis Blvd. Helvetique, 1206 Geneva 7.

38614 — UNITED KINGDOM — Micrographic equipment; cameras, readers, enlargers. Oyez Equipment Ltd., Attn: M. J. Gunn, Mgr. (M, D, I), World Microfilms Div., 53/63 Park St., London, SEI 9EA.

Toys, amusement, sporting goods

39410 — SPAIN — Games, toys. Juan Baranda Gil (A), Ciudad Los Angeles 317-B; 6th-B, Madrid 21.

39410 — SPAIN — Games, toys; all classes. Comercial Benharos, S.L. (A), General Mola 207-3, Madrid (2).

39490 — FRANCE — Prefabricated swimming pools. Garabet France (I, D), 33, Villa Moderne, 94110 Arcueil.

39491 — SWEDEN — Fishing tackle & equipment. Erenius & Co. AB (I, A), Box 15023, S-104 65 Stockholm.

39493 — GERMANY — Waterskis and accessories, as life waists, life belts etc. Huelsmann GmbH, contact: W. Siefert (I, A, D), 54 Saarlandstrasse, 6530 Bingen/Rhein.

Pens, pencils, office, artists' materials

39550 — BELGIUM — Carbonless copying paper. Etablissements Henri Delfeld (M, A), 31-35 Rue du Printemps, 1050, Brussels.

Costume jewelry, novelties, buttons, notions

39610 — SPAIN — Costume jewelry. Juan Baranda Gil (A), Ciudad Los Angeles 317-B; 6th-B, Madrid 21.

39630 — BELGIUM — Fashionable buttons for ladies' wearing apparel. Mabel (A), Ave. de Beaulieu 8, 1160 Brussels. WTDR in prep.

39642 — BELGIUM — Fashionable buckles for ladies' wearing apparel. Mabel (A), Ave. de Beaulieu 8, 1160 Brussels. WTDR in prep.

Manufacturing industries

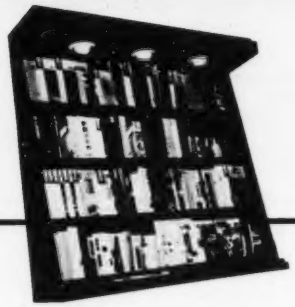
39999 — SWEDEN — Advertising buttons of metal or plastics. Broderna Danielsson AB (I, M), Box 429, S-621 04 Visby 4.

Iran State Railways To Buy Signal Armored Cable

The Iranian State Railways invites tenders for the supply of six items of signal armored cable (7180 m.) to be delivered c.&f. one of the Iranian Ports or Iranian Railways Station on the Turkish border. Specifications available at the I.S.R. purchasing department in Tehran. Tender No. 1327/51. Bid deadline is May 6.

Turkey Seeks Bids On Magneto Telephones

Turkey's Post-Telegraph-Telephone Administration has issued a tender for the supply of 15,000 manual magneto telephones, desk type. Bid deadline is Feb. 23. Copies of tender announcement and specifications are available only from the Modern Translation Bureau, Karangil Sokak 49/2, Yenisehir, Ankara for $8.50.



New Publications

When ordering any publication, indicate title and series designation, if indicated, and make checks or money orders payable to the Superintendent of Documents. Orders should be sent to the U.S. Department of Commerce, Washington, D.C. 20230, or to any of its field offices.

OFFICE OF THE SECRETARY

UNITED STATES TRAVEL SERVICE

Festival USA 1973. Nov. 1, 1972. 68 pp. $1.25. This listing includes more than 700 events occurring in the United States in 1973. It also includes major sporting events in the fields of horseracing, auto racing, tennis, golf, boating, surfing, and skiing. As well as major festivals, also listed are those "fun" festivals which are peculiar to the United States, such as the National Egg Striking Contest, the Jumping Frog Rodeo, the Brick and Rolling Pin Throwing Contest, and a host of others.

Plant visits for international visitors to the United States. 1973-74 edition. 126 pp. $1. The United States Travel Service has compiled this listing of plant visits from information submitted by Department of State-USTS liaison officers. The list is arranged by State and city. For those who are interested in locating plants of a particular industry, it is also classified by industry.

DOMESTIC AND INTERNATIONAL BUSINESS ADMINISTRATION

BUREAU OF COMPETITIVE ASSESSMENT AND BUSINESS POLICY

Construction review. Vol. 18, No. II. Annual subscription $11.50 ($3 more for foreign mailing). This issue 55¢.

BUREAU OF INTERNATIONAL COMMERCE

Overseas Business Reports

Annual subscription $28.50 ($7.25 more for foreign mailing). Single copy 30¢.

Foreign trade regulations of Yugoslavia (OBR 72-063).

Basic data on the economy of the Arab Republic of Egypt (OBR 72-073).

Overseas Business Reports

Annual subscription $28.50 ($7.25 more for foreign mailing). Single copy 30¢.

Market profiles for Western Europe and Canada (OBR 72-071). 22pp.

SOCIAL AND ECONOMIC STATISTICS ADMINISTRATION

BUREAU OF ECONOMIC ANALYSIS

Survey of current business. Vol. 52, No. 12. Annual subscription, including weekly statistical supplement, $20 ($5 more for foreign mailing). Single copy $2.25.

BUREAU OF CENSUS

Agriculture

Cotton ginned, prior to Jan. 1, by States: crop of 1972 (A10: 72-10). 1 p. 10¢.

Construction and Housing

Housing starts: November 1972 (C20-72-11). 22 pp. Annual subscription $4.50. Single copy 45¢.

Housing completions: October 1972. (C22-72-10). 10 pp. Annual subscription $1. Single copy 10¢.

Value of new construction put in place: November 1972 (C30-72-11). 28 pp. Annual subscription $5.50, including monthly and annual supplement ($1.50 more for foreign mailing). Single copy 55¢.

1970 Census of Housing

Housing Characteristics for States, Cities, and Counties

Nebraska. Vol. 1, part 29. 230 pp. $4.

Detailed Housing Characteristics

Puerto Rico (HC(1)-B53). 228 pp. $1.25.

Distribution and Services

Advance monthly retail sales: December 1972. (CB 73-13). 2 pp. 10¢.

Canned food—stocks, pack, shipments: Nov. 1, 1972 (B1-73-1). 4 pp. Annual sub. (5 issues) $1. Single copy 25¢.

Monthly selected services receipts: November 1972 (BS-72-11). 12 pp. Annual subscription $1. Single copy 10¢.

Weekly retail sales. Estimated sales of U.S. retail stores for week ending Jan. 13 (CB-73-20). 2pp. 10¢.

Foreign Trade

General imports—cotton manufactures: November 1972 (FT 130-72-11). 10pp. Annual subscription $1. Single copy 10¢.

Exports—commodity by country: October 1972 (FT 410-72-10). 506pp. Annual subscription $72.50 ($18.25 more for foreign mailing). Single copy $6.25.

Governments

Public school systems in 1971-72 (Preliminary No. 2). 34pp. 50¢. This is the second of a series of brief reports designed to make available, as early as possible, preliminary information from the 1972 Census of Governments.

Industry

Air-conditioning and refrigeration equipment: 1971 (Series: MA-35M(71)-1). 14pp. 25¢.

Population

Special census of Skokie, Ill.: June 28, 1971 (Series P-28, No. 1499). 10pp. 25¢.

1970 Census of Population

Detailed Characteristics

Kentucky (PC(1)-D19). 628pp. $4.25.
Michigan (PC(1)-D24). 820pp. $6.

Transportation

1972 Census of Transportation

Truck Inventory and Use Survey

Arizona (TC72-T3). 24pp. 35¢.
Florida (TC72-T10). 24pp. 35¢.
Illinois (TC72-T14). 24pp. 35¢.
Minnesota (TC72-T24). 24pp. 35¢.

ECONOMIC DEVELOPMENT

ECONOMIC DEVELOPMENT ADMINISTRATION

Guide for area overall economic development programs. Revised November 1972. 16 pp. 40¢. This booklet is a guide to area leaders in preparing and submitting their Overall Economic Development Program, and in updating it annually as part of a continuing development program.

Economic Development. Vol. 10, No. 1. January 1973. Annual subscription $2 (50¢ more for foreign mailing). Single copy 35¢.

SCIENCE AND TECHNOLOGY

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

National Marine Fisheries Service

Marine fisheries review. Vol. 34, Nos. 11-12. Annual subscription $12.50 ($3.50 more for foreign mailing). Single copy 60¢. A comprehensive view of United States and foreign fishing industries—including catch, processing, marketing, research, and legislation.

National Ocean Survey

Pacific SEAMAP 1961-70: data for areas 16530-10 and 17530-10, longitude 165°W to 180°W, latitude 30°N to 36°N—bathymetry, magnetics, and gravity (Tech. Report NOS 49). 162pp. $4.75.

Pacific SEAMAP 1961-70: data for areas 16524-10 and 17524-10, longitude 165°W to 180°W, latitude 24°N to 30°N—bathymetry, magnetics, and gravity (Tech. Report NOS 50). 256pp. $5.75.

NATIONAL BUREAU OF STANDARDS

Physics and chemistry. Vol. 76A, No. 5. Annual subscription $17 ($4.25 more for foreign mailing). Single copy price varies; this issue $3. Contains papers of interest primarily to scientists working in the fields of physics and chemistry.

The flammable fabrics program: 1971 (Tech. Note 749). 92pp. $1.50. This Annual Report to the Congress, required by the Flammable Fabrics Act, covers calendar year 1971.

NATIONAL TECHNICAL INFORMATION SERVICE

Order the following reports on Government-sponsored research from: National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151. Make check or money order payable to National Technical Information Service. Price for each document is $3 (microfiche 95¢) unless otherwise specified.

Criteria for a recommended standard: occupational exposure to noise (PB-213 463). National Institute for Occupational Safety and Health, Rockville, Md., 150pp. Covers acoustical terms and methods, effects of noise on man, pro-

cedures for reducing exposures, and development of the standard.

Proceedings—the International System of Units (SI) and what it involves (PB-212 232). Unversity of Kentucky, Lexington, Ky., 147pp.

Toxic substances list—1972 edition (PB-213 613). National Institute for Occupational Safety and Health, Rockville, Md., paper copy $6, 596pp.

Identification of opportunities for increased recycling of ferrous solid waste (PB-213 577). Institute of Scrap Iron and Steel, Inc., Washington, D.C., 1972, paper copy $10.60, 409pp.

Analysis of Federal programs affecting solid waste generation and recycling (PB-213 311). SCS Engineers, Reston, Va., 1972, 160pp. Studies effects of activity of 12 Federal agencies on solid waste generation and resource recovery.

EXPRO 73. A listing of extramural projects to be funded in Fiscal Year 1973. (PB-213 337). Office of Research—Monitoring, Environmental Protection Agency, Washington, D.C., paper copy $6.75, 254pp.

The beverage container problem: analysis and recommendations (PB-213 341). Research Triangle Institute, Research Triangle Park, N.C., paper copy $6.75, 201pp.

The economics of sex discrimination (PB-213 477). Duke University, Durham, N.C., paper copy $6.75, 202pp. Examines assumptions of a competitive model and two related non-competitive models for their applicability to sex discrimination and for their mutual consistency.

Conglomerate merger performance: an empirical analysis of nine corporations (PB-213 556). Bureau of Economics, Federal Trade Commission, Washington, D.C., paper copy $6.75, 207pp.

CAPER: crime analysis—project evaluation—research (PB-213 661). American Justice Institute, San Jose, Calif., 76pp. Guide for constructing a relatively simple and practical crime analysis, project evaluation, and research capability for medium-sized cities and counties. Report is written specifically for criminal justice planners and local police and sheriff departments to aid them in developing and evaluating Law Enforcement Assistance Administration supported crime reduction projects.

The following reports dealing with drug education programs of the Department of Health, Education, and Welfare are available:

Evaluation of drug education programs, Vol. I—main report (PB-213 649) Macro Systems, Inc., Silver Spring, Md., paper copy $5.45, 138pp.

Same title, Vol. II—catalog of DHEW drug education programs and materials (PB-213 650). Paper copy $4.50, 51pp.

Same title, Vol. III—detailed summary of project, methodology and appendices (PB-213 651). Paper copy $6, 179pp.

The following reports concerning manpower services being provided to veterans primarily through the nationwide network of employment service agencies are available. Volume I analyzes the nature and extent of manpower services available, relevance and quality of the services, effectiveness of the delivery system, and management and administration of services. Volume II contains an inventory of programs of national organizations which offer manpower services for veterans, as well as statistical and analytical information supportive of the analysis in Volume I:

National evaluation of manpower services for veterans, Vol. I (PB-213 489). Kirschner Associates, Inc., Albuquerque, N.M., paper copy $6.75, 218pp.

Same title, Vol. II (PB-213 490) paper copy $6, 170pp.

Measurement of the effects of transportation changes (PB-213 491). Charles River Assoc., Cambridge, Mass. 486pp. Paper, $10.60. Analyzes the problem of measuring urban transportation impacts and assemblies information on the theory of impact, identifies relevant variables, describes sources of existing data and techniques for obtaining new data, and analyzes various research designs. A strategy for impact research is proposed.

Evaluating transportation controls to reduce motor vehicle emissions in major metropolitan areas (PB-213 374). Institute of Public Admin., Washington. 367pp. Paper, $6. Covers inspection, maintenance, and retrofit; gaseous fuel systems; traffic flow techniques; bypassing thru traffic; improvements in public transportation; motor vehicle restraints; and work schedule changes.

Soviet cybernetics research: a preliminary study of organizations and personalities (AD-740 311). Rand Corp. 208pp. Paper, $6.75. Details work and personnel of two major centers, the Institute of Automation and Remote Control and the Central Mathematical Economics Institute, and summarizes annual reviews of cybernetics achievements of more than 60 institutions.

Comparative study of state water pollution control laws and programs (PB-212 534). North Carolina Water Resource Research Institute, Raleigh. 279pp. Reviews evolution of water pollution control programs in general and those of the states of Maine, Michigan, New York, North Carolina, Pennsylvania, and Virginia in particular. Focus is on administrative, legal, and organizational aspects of water quality management.

State radiation control legislation: 1971 (PB-212 424). Bureau of Radiological Health, Rockville, Md. 64pp.

Machining Data handbook (AD-743 058). Machinability Data Center, Cincinnati. 1,000pp. Paper only, $35. The Handbook is an extensive revision of the First Edition and presents machining data for operations and alloys and for technologies not covered previously. It provides starting recommendations for important machining situations and is a condensed and integrated source of machining information useful to personnel associated with material removal.

Asbestos: the need for and feasibility of air pollution controls (PB-212 963). National Academy of Sciences, Washington. 49pp. Microfiche only (Paper copies available from National Academy of Sciences for $1.75 apiece). Discusses evidence regarding pathogenicity of asbestos in man and animals, human non-occupational exposure to asbestos, and health risks associated with various degrees and types of exposure. Sources of environmental contamination by asbestos and high-priority areas of research needed to answer pressing questions concerning effects of asbestos on health are identified.

Geometric concepts for computer graphics (AD-750 743). U.S. Naval Academy. 236pp. Presents mathematical techniques that can be used to generate, manipulate, and display graphical information such as points, lines and curves by use of a digital computer.

Pilot study of housetrailer and truck camper safety, Phase II (PB-213 033). UCLA. 186pp. Paper, $6. Analyzes accident report data on travel trailers and truck campers.

Analysis of the safety of transportation of hazardous materials on the navigable waters of the United States (PB-209 099). National Transportation Safety Board. 28pp.

Opening of skilled construction trades to blacks: a study of the Washington and Indianapolis plans for minority employment (PB-213 282). U. of Pennsylvania 265pp.

Biological effects of oil pollution: Selected bibliography II (PB-213 483). National Environmental Research Center, Cincinnati. 61pp. Paper, $4.50. Contains references on the general aspects of oil pollution; reports of spill incidents; general biological effects and specific oil spill incidents; effects of oil on birds, shellfish, fish, marine and freshwater invertebrates, and plants; effects of oil on dissolved oxygen; carcinogenic effect of oil; and microbial utilization of oil. Report is an addendum to PB-188 206—Biological Effects of Oil Pollution-Bibliography. 52pp. Paper, $6.

Six New Categories Added To Weekly Reports

NTIS is now publishing six new titles in its weekly Government Abstracts subscription series. The new reports will contain technical information in these areas of interest to business and technology: Behavior ($35 annual fee), Business & economics ($28), Biomedical technology & engineering ($28), Industrial engineering ($35), Library & information sciences ($20), and Urban technology ($35).

A discount of $3 is given for each additional category when included with the original subscription. Customers from overseas, Canada and Mexico must add $8.75 to categories priced at $35; $5.75 to categories priced at $22.50; $5 to categories priced at $20, and $4.50 to those at $17.50.

Each newsletter reports on such technical advances as testing of materials and processes now in use, development of new techniques and methods, ways to improve existing products and methods, and modification of materials and processes.

These six categories of the Weekly Government Abstracts were formerly published on a biweekly basis as Government Reports Topical Announcements (GRTA). They join these five categories now published as Weekly Government Abstracts: Environmental pollution & control ($22.50), Computers, control & information theory ($22.50), materials sciences ($22.50), Transportation ($17.50), and Administration (formerly Management Practice & Research ($17.50).

☆ U.S. Government Printing Office: 1973—511-345/15

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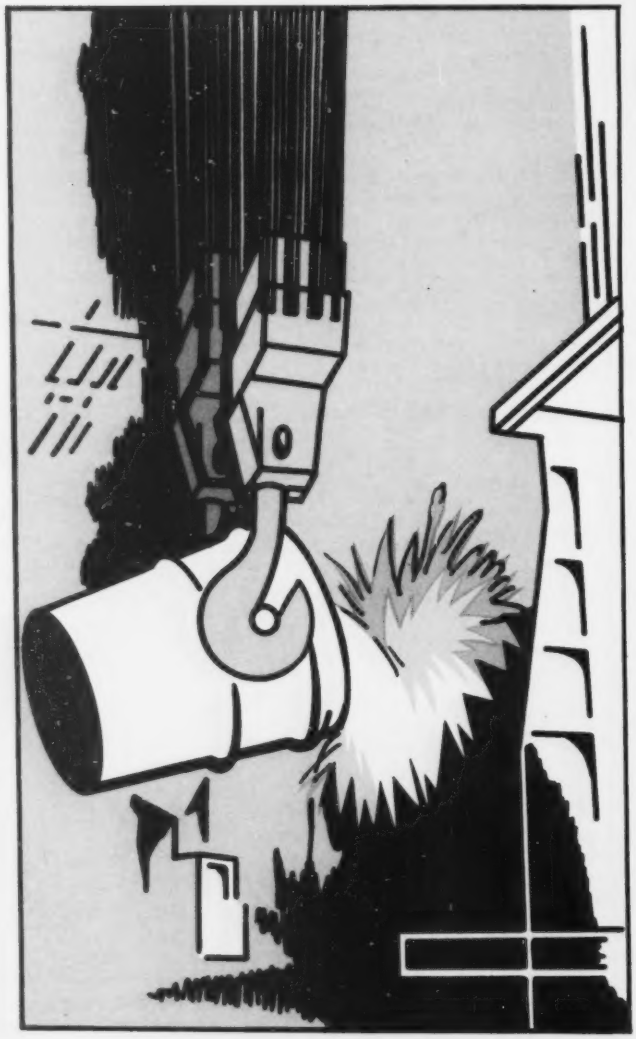

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